WORD STUDY
IN THE ELEMENTARY SCHOOL

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WORD STUDY IN THE ELEMENTARY SCHOOL

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Preface

Polonius — What do you read, my lord?
Hamlet — Words, words, words.— *Shakespeare*

The author of this book believes that a good elementary school in our land is known chiefly by the kind of English that is used therein. If the pupils read with fluency and proper appreciation books possessing worthy content, and speak and write their mother tongue with accuracy, clearness, and force, the school, no matter how humble its estate, or how numerous its short-comings, has not labored in vain. On the other hand, no matter how excellent may be the equipment, how elaborate the course of study, no school can lay claim to a high rank which neglects the all-important matter of expression.

The study of language is largely a study of words. The word is the first object of study presented to the child when he enters school; and there never is a time from that day until the day of graduation when the word ceases to occupy his attention. So important an element of education deserves our most careful consideration. The following chapters embody the author's effort to gather up the various phases of

word study, which are usually presented in isolated fashion, into a single volume.

It has been well said that "the thought in the thing and the law in the mind determine the method." In this book the method advocated is in every instance based upon "the thought in the thing" and "the law in the mind." The nature of the word, in its formation, spelling, and meaning, is considered from the point of view of the history of the English language. The act of spelling as a mental process is analyzed by scientific methods. The way the child puts meaning into words is investigated in the same way. On the facts thus learned are based a series of inferences in the form of propositions constituting Chapter IV. Upon these inferences, which are the raw material of method, the author has built all his elaborations contained in subsequent chapters on methods and devices of teaching the spelling, meaning, formation, and use of words.

It is believed that this work is the only attempt that has ever been made to collect all the available scientific material on word-study into a single body of assorted knowledge and suggestion. The partial bibliography given in Chapter IX shows that most of the matter here summarized is scattered in periodical publications, some of which are accessible to only the most favored teachers. Special attention is

invited to the two chapters on method (V and VII). These are the most practical parts of the subject, although their full import can not be comprehended without a careful study of the preceding chapters. Chapter VI., which treats of the meaning and use of words, is probably one of the most useful phases of the discussion, because it treats in a comprehensive way a topic that is little understood by teachers and is sadly neglected.

For convenience of references, a "summary" is provided in Chapter IX, showing at a glance the various forms of word study that should be carried on in the several grades, and offering an alphabetical list of prefixes, suffixes, and stems suitable for study in the elementary school.

JOSEPH S. TAYLOR

New York, June 14, 1909.

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Elementary Word Study

I

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The Scope of Word Study

The study of words in the elementary school includes the following elements: Spelling, Meaning and Use, Derivation (including prefixes and suffixes), Capitalization, Syllabication, Pronunciation, Phonics, Contractions, Abbreviations, Compounds, Plurals, Possessives, Homonyms, Synonyms, and Dictionary Drill. Spelling and Meaning will be treated in separate chapters. Some of the topics will be considered under spelling and the rest will be briefly discussed here.

1 Pronunciation

Orthography and pronunciation are reverse processes. The problem of pronunciation is: given the form of a word to determine its name. The problem of spelling is: given the name of a word to determine its form. Pronunciation is the translation of eye-

symbols into ear-symbols; spelling is the translation of ear-symbols into eye-symbols.

That the problems of word study which the present generation is trying to solve are not new, may be seen from the following quotation from a book printed almost a century ago:[1]

"Some have attempted to change the orthography of our language, and to write words as they are pronounced; but for an *individual* to presume to make the least alteration, in that respect, must be the height of arrogance and folly. . . . Even a Roman emperor once exerted all his power to introduce one new letter into their alphabet, but without effect. . . . Custom will be sovereign in this case. . . . Pronunciation, as well as orthography, is entirely under the control of custom. This has decreed that the words *boatswain*, *shew*, *sew*, *cucumber*, should be pronounced *bosn*, *sho*, *so*, *cowcumber*."

In order to become proficient in pronunciation the child must have systematic drill in the art. The chief elements involved in pronunciation are enunciation and accent. Enunciation is sometimes called articulation. Both terms are related to pronunciation as parts to a whole. Pronunciation refers to the utterance of the entire word, while articulation or

[1] Abner Alden: "An Introduction to Spelling and Reading." Vol. II., 9th edition, Boston, 1824.

enunciation has reference to the elementary parts of the word. We get correct pronunciation of a word by the clear articulation of its sounds and syllables, and a proper distribution of the accents.

(1) ARTICULATION OR ENUNCIATION Elementary sounds are divided into vowels and consonants. The vowel characters, with their diacritical markings, represent nineteen sounds. A vowel sound is produced by a continuous passage of the breath. The following table exhibits the vowel sounds as usually given in the dictionaries:

ā, *long*, as in *ale;* like e̲ in *prey.*
ă, *short*, as in *fat.*
â, as in *care;* like ê in *there.*
ä, *Italian*, as in *arm.*
à as in *ask.*
a̤, *broad*, as in *all;* like ô in *fork*, aw in *pawn*, au in *faun.*
ē, *long*, as in *me*, like ï in *police.*
ĕ, *short*, as in *met;* like ai in *said*, ay in *says.*
ēr, as in *her;* like ĭ in *bird*, ŭ in *urge.*
ī, *long*, as in *ice;* like ȳ in *fly.*
ĭ, *short*, as in *tin;* like y̆ in *hymn.*
ō, *long*, as in *old;* like ew in *sew*, eau in *beau.*
ŏ, *short*, as in *not;* like a in *what.*
ū, *long*, as in *use;* like ew in *few.*
ŭ, *short*, as in *sun;* like o̤ in *none.*
u̇, as in *rude;* like o̤ in *to*, o͞o in *moon.*
u̇̇, as in *pull;* like ö̤ in *wolf*, o͝o in *foot.*
oi, as in *boil;* like oy in *boy.*
ow, as in *how;* like ou in *our.*

A consonant sound is produced by an obstruction of the breath. In our language a consonant sound is usually uttered in combination with a vowel sound. Consonants are divided into classes that have reference to the organs by which the sounds are produced, as follows:

(*a*) Aspirate; as *h*, produced by forcing the breath through the glottis.

(*b*) Gutturals; as, *k*, *g*, *ch* (chorus), made by throat.

(*c*) Palatals; as, *ch* (church), *j*, made by palate.

(*d*) Dentals, made by teeth; as, *t*, *d*, th.

(*e*) Linguals, by tongue; also called *sibilants*, from their hissing sound; as, *sh*, *zh*, *s*, *z*.

(*f*) Labials, by the lips; as *p*, *b*, *f*, *v*.

L and *r* are called *trills*.

Consonant sounds are further classified as *hard* or *soft*. Those that require considerable force in utterance are hard, like *p*, and *t;* those that require less effort are soft, like *b* and *d*. The table which follows exhibits the consonants in their proper classification, and names also the organs by which they are severally produced:

TABLE OF CONSONANTS[1]

	SPIRANTS			MUTES			
	Hard	Soft	Trilled	Hard	Soft	Nasal	
1 Glottis	h						Aspirate
2 Root of tongue and soft palate				k, g		ng	Gutturals
3 Root of tongue and hard palate		y (yea)		ch (church)	j (judge)		Palatals
4 Tip of tongue and teeth				t	d	n	Dentals
5 Tongue and edge of teeth	th (pith)	th (breathe					Dentals
6 Tip of tongue and teeth	z (pose)	s (sin)	l				Linguals
7 Tongue reversed and palate	zh (azure) (pleasure)	sh (sharp) (sure)	r				Linguals
8 Lower lip and teeth	f	v					Labials
9 Upper and lower lips				p	b	m	Labials
10 Upper and lower lips rounded	wh (which)	w (with)					

[1] From Maxwell's "Advanced Lessons in English." American Book Company, New York, 1891. Used by the kind permission of the publishers.

The following letters have been omitted from this table because their sounds are represented by other letters: *c*, *g* (soft), *q*, *x*.

Another scheme of classifying sounds is the one used by Webster's International Dictionary; this is shown in the tables given below:

VOCALS

These are the vowels: a, e, i, o, u (w, y, sometimes).

SUBVOCALS

b, *as in* ..... bid	r, *as in* ..... rug
d, " ..... did	v, " ..... vote
g, " ..... gun	w, " ..... win
j, " ..... jet	y, " ..... yet
l, " ..... let	z, " ..... gaze
m, " ..... met	z, " ..... azure
n, " ..... nag	ng, " ..... long

th, *as in* those

ASPIRATES

f, *as in* ..... fame	t, *as in* ..... time
h, " ..... home	ch, " ..... child
k, " ..... king	sh, " ..... shine
p, " ..... play	th, " ..... theme
s, " ..... sky	wh, " ..... when

Correct pronunciation is taught chiefly by imitation, by phonic analysis, and by correcting the faults of the pupils.

(*a*) *Imitation* The child instinctively imitates the language sounds he hears. This is the impulse which guarantees the acquisition of language in the

case of normal children. So potent is the instinct of imitation that a child will learn any language that happens to prevail in his environment. Alfred Russell Wallace says that the same is true in the animal world. Young birds never have the song peculiar to their species, if they have not heard it; whereas they acquire very easily the song of any other bird with which they are associated.[1] These significant facts point the way for the teacher in his efforts to improve the child in the use of oral or written speech. The teacher must himself be a model of correct articulation, if he expects his pupils to acquire the habit. In teaching foreigners he will find it necessary to utter the difficult sounds slowly and require the pupil to observe the position of the speech organs while the sounds are produced.

(*b*) *Phonic Analysis* This should receive careful attention in every school. Many of the faults of pronunciation found among children may be prevented or removed by persistent drilling on elementary sounds. The work is to be so conducted as to be both voice-training and ear-training, and is to be so organized as to become an essential and integral element in the method of teaching reading. One very thor-

[1] Tracy: "The Psychology of Childhood," p. 117. D. C. Heath & Co., Boston, 1896.

ough and intelligent scheme of phonetic drill was worked out by the late Edward G. Ward, of Brooklyn, in connection with his method of reading.[1] Many other schemes have been devised by authors of text-books on reading; but in spite of all the excellent material available, phonic drills are sadly neglected in many schools. The principal point to remember in this connection is that such drills, in order to be effective, must be both *systematic* and *persistent.* Desultory work, which is done one way in one class and some other way in the next class, or is done when the teacher happens to think of it, is almost a total waste of time. Careful supervision, which grades the work and insists on daily faithful practice, is absolutely essential to success. The first *desideratum,* therefore, in phonic drills, is a plan devised by a teacher, principal, or author, which specifies the exact work to be done in each grade and sees to it that every teacher performs his allotted portion of the task.

Phonic Analysis should include exercises on the vocals, subvocals, and aspirates by themselves and in combination. At the end of the first three years, if the work has been thoroughly done, the formal drills on mere sounds as such may cease. Thereafter each teacher or grade should work upon exercises

[1] "The Rational Method." Silver, Burdette & Co., New York.

designed to correct characteristic errors made by the pupils. These faults of pronunciation will vary in different communities and in different sections of the same city. Children of German parentage or environment have one set of difficulties, Italians have another, Russians have another, and so on; while the native boy has a stock of mistakes peculiar to himself. A half-hour's observation in any classroom will reveal the kind of drill required in that particular class. In the course of a five-minute reading-test of a fourth-year class the author discovered the following errors: *threw* (*troo*), *dew* (*do*), *Arctic* (*Artic*), *Antarctic* (*Antartic*), *bird* (*boid*), *apology*. These and similar words should be put into lists and given to children for practice in articulation.

(*c*) *Errors due to Defective Organisms.*

(*A*) *Stammering* Stammering is a hindrance or obstructed utterance of words. Sometimes it is due to a defect in the organs of speech. Such was apparently the fact in the case of Demosthenes, who is said to have cured his faults of enunciation by declaiming with pebbles in his mouth. Sometimes stammering is merely a habit contracted through the power of suggestion by associating with companions who stammer. When some people are greatly excited by anger or other powerful emotions they

stammer. The remedy in both of the cases just cited is speaking slowly. Frequently stammering is due to nervousness or timidity, in which case the teacher may overcome the defect by inducing in the pupil a state of self-confidence and self-forgetfulness. One of the writer's classmates in a normal school was afflicted in his youthful days with a serious case of stammering. He was cured in a school of oratory chiefly by drills in deliberate utterance and the habit of self-control. To-day he is a prominent railroad attorney of the West, and no one would suspect his former deficiency.

(*B*) *Lisping* Lisping is the use of the sound *th* for *s*. It may be due to a peculiarity of the vocal organs, or may be a mere habit of which the victim is unconscious. The remedy is practice in making the sounds of *s* and *th*, either in isolation or in words of which they form a part.

(2) ACCENT For a complete discussion of accent the reader is referred to the unabridged dictionaries. Accent is a stress of voice placed upon one or more syllables. It gives a musical element to speech and adds to the beauty and harmony of language. Accent is of two kinds, primary and secondary, the former being the stronger. Some words have two secondary accents. Sometimes the primary and secondary accents are nearly equal, as

in *violin*, *caravan*, *artisan*. Sometimes the primary and secondary accents are exchanged, the primary becoming secondary and the secondary primary. *Artisan*, *reverie*, and *invalid* are examples of exchanged accent.

Accent, like enunciation, is taught chiefly by imitation and by drills in correcting errors. The teacher should be a model of correct accent. The pupil should be made familiar with the method of indicating accent in the dictionary. Pronouncing matches may be conducted as follows: The teacher spells words orally or on the blackboard and children are called upon to pronounce. They may choose sides, or "trap," or "go out." An occasional exercise of this kind lends zest to the work, stimulates interest in correct pronunciation, and assists in the formation of habits of accuracy in oral speech.

(3) Diacritical Marks Phonic work in English involves a knowledge of diacritical markings. Since we employ the Phœnician alphabet, which has but twenty-six characters, to represent some forty sounds, it is necessary for some letters to represent two or more sounds. In order to indicate the exact pronunciation of a word, therefore, we employ a system of marks. Following is a list of the marks commonly used:

VOWEL MARKINGS

The macron,	—, as in āte, ēve.
" breve,	◡, as in b̆ăt, f̆ŏx.
" dot,	., as in ȧsk, wạs.
" diæresis,	.., as in ärm, a̤ll.
" circumflex,	^, as in flâre, thêre.
" wave or tilde,	~, as in fı̃r, tẽrm.

CONSONANT MARKINGS

The bar,	—, as in b̄get.
" dot,	., as in ġem.
" cedilla,	¸, as in çell.
" suspended bar,	⊥, as in ex⊥ist.

The extent to which these marks should be resorted to in elementary reading is a disputed point. Many excellent authorities make them an essential part of phonic reading and phonic drill from the very first, while other well-known educators believe that they may be dispensed with during the first three years. But after the child is old enough to use a dictionary he must know the meaning of diacritics. The writer has found many classes that could use the dictionary with facility as a book of definitions, but he has seldom found one whose members could with confidence tell the pronunciation of a strange or difficult word by its markings. This deficiency is due to lack of drills in diacritical markings. Children should be practiced in pronouncing words according to their

marks, and also in marking the sounds of words whose pronunciation is given.

2 Capitalization

The use of capitals demands attention from the time when the child first begins to write to the end of the school course. In the first year the pupil will do little more than copy words and sentences, and for this work no formal teaching as to capitals will be needed. During the second year, dictation and reproduction may be introduced, and therefore it will be necessary to teach the use of the capital at the beginning of a sentence and in writing I and O. During the third year the use of capital letters for the first word of a line of poetry, for months and days, and for titles, may be added. For the fourth year the capital for particular names can be taught. During the fifth year, add the words North, South, East, West, when used to denote parts of a country; also the first word of a direct quotation, names representing the Deity, names of the books of the Bible, and important words in titles and headings. There remains only the rule for personification, which may be introduced during the sixth or seventh year.

In all word lists for spelling, proper nouns and adjectives should be printed or written with capital

initials; all other words should begin with small letters.

3 Abbreviations and Contractions

This is a busy world, and business men save time by shortening written words. By calling attention to street signs, bills, letters, etc., the teacher induces children to observe the two ways of making words shorter; namely, by abbreviations and by contractions. The rule is then discovered that abbreviations are followed by the period and contractions represent the omitted letters by the apostrophe. As abbreviations are merely devices to save time and space, they are neither necessary nor desirable except in business papers and letter headings or when a lack of time or space seems to require them, *e.g.*, the word "County" and the name of the state in the superscription of a letter. Contractions and abbreviations should be taught systematically, either as a part of the spelling lesson or in separate lessons. In the case of proper names, many teachers prefer to present the abbreviation with the word to which it belongs in the same spelling exercise, *e.g.*:

January	Jan.
February	Feb.
August	Aug.

Wednesday	Wed.
Captain	Capt.
Colonel	Col.
Colorado	Col.
Michigan	Mich.
England	Eng.
Kentucky	Ky.

There is no especial difficulty in teaching the use of abbreviations and contractions as early as the third year; and there is much need of such instruction as soon as the child has acquired some facility in reading. He meets in his books many cases of contraction similar to the following:

> The year's at the spring
> And day's at the morn;
> God's in His heaven,
> All's right with the world.

Some early drills of the kind suggested here will prepare the pupil to read and understand contractions without difficulty. In order to impress the lessons, the two ways of shortening words should not only be observed in written or printed form, but should be frequently written from dictation.

4 Compounds, Plurals, and Possessives

These three classes of words are usually taught in connection with grammar, but the exercise is really one of spelling. Some incidental teaching of the words may be done through observation and written practice in the early years, before the child is introduced to the formal study of grammar. After he takes up grammar as a separate study the drills should be frequent and thorough. Some of the spelling books make provision for words of the kind above specified, as shown in the following exercises:

RULE To form the plural of nouns ending in *y* preceded by a consonant, change *y* to *i* and add *es;* as *army, armies.*

al'ly	beau ty	a'genc y	en'e my
du ty	bod y	ar'ter y	in jur y
ed dy	fair y	cav i ty	gal ler y

RULE Nouns ending in *f, ff,* and *fe* are made plural either by adding *s* or changing *f* or *fe* into *v* and adding *es.*

Add *s*	Change *f, ff, or fe* to *v* and add *es*		
be lief	roof	beef	loaf
chief	scarf	calf	knife
proof	sheriff	life	wolf

Certain common foreign plurals require special attention; among these are *phenomena, data, genera, axes,* etc. Many business men and sometimes careless writers of books are in the habit of using "data"

with a singular verb. The writing of plural compounds is generally rendered easy by the simple device of determining the principal part of the word and pluralizing that, *e. g.*:

father-in-law; principal part, *father;* hence, *fathers-in-law.*

court-martial; principal part, *court* (the thing we are speaking of); hence, *courts-martial.*

handful; principal part, *ful* (equals a measure); hence, *handfuls.*

rose-tree; principal part, *tree;* hence, *rose-trees.*

II

Nature and Value of Spelling

I Where to Begin Spelling

The method of teaching reading at present in vogue, under whatever name or guise it appears, begins almost from the first day with the expression of thoughts in sentences. Words are learned not merely as constituent parts of the sentences, but also as individual symbols of objects or ideas. If the method be analytic, the process of learning to read involves the separation of the sentence into words, the words into syllables, syllables into letters or sounds. If the method be synthetic, the reverse procedure takes place; the child begins with letters, combines these into syllables, syllables into words, and words into sentences. Whenever the stage of the individual sound has been reached, it is necessary to teach the names of the characters that represent the sounds. It is customary to teach the letters of the alphabet in order at the close of the first year or at the beginning of the second. Word-analysis-and-

synthesis naturally leads to spelling, which may therefore properly begin with the second year of school. During the first stage of spelling-instruction words should be presented in reading lessons in such a way as to make their meaning clear. Pupils are to observe carefully the printed and written forms of words. The naming of letters will help to fix the forms in the memory. Whether the method be analytic or synthetic, the final stage in either case will be a mastery of the elements and their combination as word-units.

2 The Origin of the Alphabet

The English alphabet originated in Egypt in the remote past. From there it was carried into Phœnicia, where it was modified and became the Phœnician alphabet. It is well known that the Phœnicians were a commercial and colonizing people, and wherever they went they carried this alphabet. In time the Greeks received it. They passed it on to the Romans, and they in turn gave it to the Germanic peoples. Originally the alphabet had twenty-two characters. In the course of historic transmission, some of the characters were dropped, others were added, and the phonetic values of many were greatly changed. Furthermore, there were not enough

characters to represent all the sounds of the modern languages that borrowed the oriental alphabet, and so it came to pass that some letters represent a variety of sounds. It is evident that this circumstance alone accounts for a large part of the difficulty of English orthography. There is nothing in the pronunciation of such words as *dough*, *cough*, *plough*, etc., that gives any hint as to their spelling; and conversely, the spelling furnishes no clue concerning the pronunciation.

3 The Norman Conquest of England

The native language of England is the speech of Teutonic tribes that came into the country in the fifth century and conquered the Celtic inhabitants. It is known as Anglo-Saxon. "The Roman missionaries first reduced this language to writing. They used the Roman letters, in nearly their Roman value, and added new characters for the sound of *a* in *fat*, *th* in *their*, *th* in *thine*, and *w*. In the fusion of Normans and Saxons, after the Norman Conquest, neither party could pronounce the words of the other party correctly, and in spelling these mispronunciations, they introduced many lamentable irregularities."[1] But while this union of two great tongues

[1] "The Origin of Language." Quoted in Standard Dictionary, p. IX.

has resulted in incongruous and unmanageable spellings, it has produced a language of which Jacob Grimm writes as follows: "Its entire structure and completeness, at once wholly intellectual and wonderfully perfected, has proceeded from an astonishing union between the two noblest languages of modern Europe, the Germanic and the Romanic; and it is well known how they are related in English, the former predominantly giving the material basis, the latter the intellectual conception. In fact, the English language as used by Shakespeare can rightly be called a world language, and seems, like the English people itself, destined in the future, in yet greater measure than heretofore, to rule in all the ends of the earth. When we consider its richness, intellectuality, and condensed adaptability, no one of all the other living languages may be placed at its side, yea, not even our German language."

4 The Practice of Authors and Copyists

Before the invention of printing, authors spelled as they pleased. There was no recognized standard. Words were spelled in various ways by different authors and frequently by the same author. Even proper names had no fixed and invariable spelling. Copyists still further complicated the situation by

orthographic independence and inconsistency. In the introduction to "Webster's Dictionary" it is stated that Mainwaring has been spelled in one hundred thirty-one different ways. Even in Shakespeare's day we find the great poet's name written in more than thirty different ways.

5 The Invention of Printing

The immediate result of the invention of printing by movable types was that the bad spellings of the time became more or less fixed. Indeed, much of the perverse spelling of books printed three centuries ago may be attributed to the printer, who often inserted or eliminated letters to suit the length of the line. It is no uncommon thing to find in the works of Chaucer and Spenser the same words occurring in several different forms upon the same page.

6 The Publication of English Dictionaries

To the celebrated Dictionary of Dr. Samuel Johnson, more than to any other influence, is credited the present fixed form of English spelling. This great work was first published in 1775. The changes in spelling introduced by Dr. Johnson were generally made in order to restore the ancient orthography or

to remove some anomaly. The result of Dr. Johnson's work was that it settled usage definitely in favor of some one spelling, and thus removed the cause of much confusion. In 1828 Dr. Noah Webster issued his Dictionary of the English Language. He made many changes in spelling that met with universal favor among reputable authors. The most important of these changes was the restoration of older spellings in order to reveal the etymological affinities of words and to remove anomalies and special cases. But in spite of these changes a large portion of English words still refuse to conform to the rules for spelling.

7 Spelling in the Schools

Spelling as a school subject owes its existence to the invention of printing. The spelling method of teaching reading came into universal use in the Eighteenth Century. It has been well said that our fathers used all their ingenuity to make the simple art of reading as difficult as possible. Not only did the children learn to read by spelling, but spelling was kept up after they had acquired some facility in reading. Even the most difficult and unusual words were used. A reading book published in 1766 contains these words for spelling:

Allerliebenswürdigster, regimentsquartiermeister. Another reading-and-spelling-book for beginners, published in 1804, begins the spelling with the word *Viceoberappellazionsgerichtspresident*, which contains fourteen syllables. An educational author, writing in 1822, speaks as follows concerning these methods: "Spelling seems to be a frightful judgment of divine wrath, which the righteous God has allowed to come upon us and oppress us for a long time on account of our school sins, and we fervently pray God for Christ's sake that He will have mercy upon us and take away this judgment from us and open the eyes of those who cannot see until He does, in order that a permanent foundation may the sooner be laid, and that which has long lain waste may the sooner be rebuilt."[1] Another writer says that the spelling of those days was "a greater evil than the burning of witches and heretics, a greater crime than the rack and all inhumanities taken together." In America it was the fashion at one time to use the dictionary as a spelling book and to spell and define all the words printed from A to Z. Christopher A. Green, in the year 1851, delivered an address before the American Institute of Instruction, in the course of which he referred to his own method of teaching

[1] Quoted by Dr. Burnham from H. Fechner, *Pedagogical Seminary*, Vol. 13, p. 477.

spelling in these words: "Each pupil has a blank book, in which the words spelled are written with pen and ink. I use Worcester's dictionary, which I go through regularly from beginning to end."[1] The method has been well characterized by Mr. Roark as "a pedagogical horror."[2]

From this extreme view of the importance of spelling the pendulum in educational history swings to the opposite extreme, that spelling is of little or no consequence. "Very few people realize," says Walter W. Skeat,[3] "the extreme lateness of the idea that the same spelling must be adhered to throughout the same book. It is really no earlier than 1700; for previously to that date varieties of spelling, such as *he* and *hee* upon the same page, can usually be found." Queen Elizabeth is cited as a well-educated woman who spelled "sovereign" in seven different ways. Frederick the Great and Blucher are examples of indifference to spelling. Some writers of the present generation hold contemptuous views concerning the value of orthography. The late Arnold Tompkins was quoted as saying that he wanted children to learn to spell, but "not too well."

[1] "Methods of Teaching Spelling," in *Journal of American Institute of Instruction*, 1851, p. 181.

[2] "Method in Education," p. 133. American Book Company, 1899.

[3] *The National Review*, Vol. 48, p. 304.

William E. Mead,[1] of Wesleyan University, Middletown, Conn., says there is no special virtue in being able to arrange letters in a certain order. Spelling which is good in America is regarded as very bad in England. An ignorant man usually spells badly, but many men who are not quite sure of their spelling are unjustly ranked among the ignorant. There is some excuse for the worst of spellers, and there is much question whether the social position of many excellent people should on this score be made precarious. "It is even hinted that George Washington and other patriots showed their independence as much in spelling as in other things."[2]

Confusion and conflict have been rife since the time of Pestalozzi as to the best way of teaching spelling. Some of the great writers emphasize sound and the ear.[3] Others lay stress on the importance of the physiognomy of the word and the eye.[4] Still others think the rules of spelling and the understanding are of supreme importance.[5] Diesterweg especially emphasized pronunciation, while Bor-

[1] "Is Spelling a Lost Art?" *Educational Review*, Vol. 19, p. 49.

[2] In a letter written by Washington in 1785 to his Aid-de-Camp, which was recently sold at auction, choosing is spelled "chusing." See *New York Times*, March 29, 1908.

[3] Olivier, Grassman, Harnisch, Diesterweg, Rudolf. See Dr. Burnham's article.

[4] Bormann, Kehr.

[5] Wandes, Heyse, Mohr.

mann considered this a hindrance rather than a help. Wawrzyk is the only authority among the early writers who points out the significance of muscular movements of the hand and speech organs. Bormann and Kehr believe copying the most advantageous movement in learning to spell, while Naumann is convinced that copying is a serious error. Harnisch and others speak disrespectfully of rules. Diesterweg advocates dictation exercises; Bormann and Kehr are opposed to this procedure. They all use oral spelling, except Wawrzyk, who absolutely rejects it.

This confusion of opinion is due to the fact that it is opinion rather than knowledge. The authors quoted argued and theorized, but did not study the psychology of the subject. In order to determine in a conclusive way which of the several methods is the most efficacious, scientific experiments are required. These have in recent years been made, and the facts established by them will be found in Chapter III.

8 Educational Value of Spelling

(1) Not a Culture Study It has become generally understood that spelling is not a culture study, like literature and history, but a necessary art which is to be acquired in the most direct and

positive way, and which is to become automatic as soon as possible.

(2) CONVENTIONAL VALUE In spite of the fact that some people have a poor opinion of good spellers and cite Washington and Queen Elizabeth in support of their contention that very good people have been poor spellers, it remains true, in the opinion of the present generation, that it is a disgrace not to know how to spell. Business men complain every now and then that the graduates of the elementary schools can't spell. Dean Briggs, of Harvard, says: "We have boys who cannot spell, teachers who cannot spell, college professors who cannot spell and who have a mean opinion of spelling." A single slip of spelling in an otherwise faultless letter attaches an odium to the writer. It is no particular credit to be a good speller, but it is a disgrace to be a poor one. Spelling, therefore, has a conventional value which may not be despised with impunity.

III

The Psychology of Spelling

In order to arrive at sound conclusions on the pedagogy of spelling, it is well to inquire next what the subject is as a mental process. What mental and physiological activities are involved in an act of spelling? What is the cause of poor spelling? What is the relation of the spelling habit to general mental ability? Which of the several methods or devices of teaching spelling produce the best results, and why? These and a host of similar considerations are involved in the discussion of the spelling question. In this as in other subjects the major part of the literature accessible is the record of mere opinion, based usually upon personal experience, or other insufficient data. The psychology of spelling has been scientifically studied by a number of educators in this country and in Europe. Following will be found a brief account of nine of these investigations with the conclusions drawn from each.

(1) ADELAIDE E. WYCKOFF [1] In 1893, Miss

[1] *Pedagogical Seminary*, Vol. 2, p. 448.

Wyckoff published a brief article giving an account of some experiments she had made upon five young women over twenty years of age whom she designates as "incorrigible bad spellers." The subjects were in other respects able and faithful students of Packer Institute, Brooklyn, New York. For purposes of comparison the experiments were made also upon two good spellers. The author analyzes the spelling process into the following elements: *sensation* (perception); *directing of attention; retentiveness; mental image; automatic circuit.*

The test of the senses (for perception) revealed defective vision in four of the five poor spellers.

The mode of attention was tested by the exposure for one second of a card containing an unpronounceable combination of letters. The subject was required to write down the letters in the order observed. This test was also given to forty other students. The result showed three modes of directing the attention:

In the first, two or three letters only were seen, usually the first, second, and last. This mode of attention seizes the whole of an impression with its characteristic features. The bad spellers of this type "were students who always sought out the general principle and remembered by means of it. Conspicuous as thinkers, they were comparatively slow readers. Almost all their mistakes in spelling

occurred in the latter half of the word. . . Further test made it clear that attention was habitually directed to the beginning of the word."

In the second mode of attention, most of the letters were correctly perceived and in the right order. "The impression made was that of a whole composed of distinct parts." The best representative of this type was able to perceive instantly and correctly a combination of nine letters, but she failed utterly in the tests on visualization and retention.

In the third mode, most of the letters were seen, but the order was not known. In one case nine correct letters were given in a shuffled order. Here, apparently, the impression was of individual unrelated parts. This class furnished no bad spellers.

"Further tests showed that the best natural speller perceived long words in two or more groups of letters, none of the poor spellers having this habit."[1]

No account is given of the test for memory.

The test for imaging required the subject to spell the word backward from the visual image.

The automatic circuit was tested by having a paragraph written with the hand concealed. Mis-

[1] This statement is interesting in connection with recent discoveries as to fixation "points" in reading, as revealed by the scientific study of eye-movements. See "The Psychology of Reading," by Dearborn. The Science Press, New York, 1906. Also see "The Psychology and Pedagogy of Reading," by Huey. Macmillan, 1908.

takes were made of insertion, omission, inversion, and substitution.

Following are Miss Wyckoff's conclusions:

1 Many poor spellers have defective senses.

2 Bad spelling may in part be the result of a strong natural bent toward selective attention.

3 In such cases, where the syllable method of teaching might be especially ineffective, the mechanical memory would be helped by assisting the attention in its selection. For example, above the word *separate* might be written, as an invitation to the eye, the syllable *p-a-r*.

4 "Apperceptive methods should be employed from the outset in the teaching of spelling. For the class of students mentioned in the preceding paragraph they are a necessity; for all they are an economy. The children could use a set of cards, each containing a word so chosen as to furnish material for induction in the finding of root, prefix, and suffix, and the meaning of each. Then, using these as tracers, they could notice in reading and blackboard exercise such new words as contained the familiar elements." The words *separate*, *preparatory*, and *reparation*, are suggested as samples.

(2) W. A. LAY[1] This writer employed nonsense syllables in his experiments, of which the following are samples: *Libug*, *labog*, *lubag*, *ribog*, *rabig*, *labeg*, *guhlin*. There were eight separate tests to determine the percentage of errors the subject made in remembering the spelling of four of the nonsense words under these eight conditions: 1 Hearing; 2 Hearing with low speaking; 3 Hearing with loud

[1] *Führer durch den Rechtschreib-Unterricht*, Wiesbaden," 1899. An abstract of this study may be found in *Pedagogical Seminary*, Vol. 13, p. 482.

speaking; 4 Seeing; 5 Seeing with low speaking; 6 Seeing with loud speaking; 7 Oral spelling; 8 Copying.

In the tests for hearing and seeing without speech, the pupil, when words were spelled for him orally or in writing, was required to inhibit the muscular movement of expression by firmly closing his jaws and keeping the vocal organs quiet. In seeing or hearing with speech movement he repeated the letters in a whisper or aloud. The test included an aggregate of some three thousand individual experiments on children from the first to the sixth school year. The same experiments to the number of eighteen hundred were made upon classes of the teacher's seminary, and the results in this case were always similar to those obtained in the elementary school. Taking the figures of both investigations together, the averages are shown in the following tables:

	Method of Testing	*Per cent of errors per pupil*
1	Hearing, with speech movement	3.04
2	Hearing, with low speaking	2.69
3	Hearing, with loud speaking	2.25
4	Seeing, with speech movement (reading)	1.22
5	Seeing, with low speaking	1.02
6	Seeing, with loud speaking	0.95
7	Spelling (loud)	1.02
8	Copying (low speaking)	0.54

Commenting on these figures, Lay says: "If we note the increasing number of errors, then the exercises in orthography are to be arranged in the following order, according to their value: Copying, spelling orally, reading aloud, dictation." The same author also made experiments to determine the value of printed as compared with script spelling books. Among his further conclusions are the following:

1 In orthography script spelling books surpass printed books; . . . they are almost twice as valuable as material for sense perception.

2 Cultivation of correct pronunciation is of great importance for learning orthography.

3 As much as possible the sense of a word (apperceptive aid), the pronunciation, and the writing must be united, and the motor presentation in writing is the determining factor.

4 The usual spelling lesson should be omitted and forbidden by law on account of the time wasted by it.

5 Dictation may be used in orthography only as a test and sparingly.

6 The so-called copying method, the writing down of sentences and the like, from memory, is useful, since it is most closely related to the orthographic practice in common life.

7 The knowledge of derivation of words is advantageous in orthography as a means of fixing the attention on word forms.

8 The rules of spelling are not directly of value, but are useful as a means of fixing the attention and developing a critical sense for orthographic forms.

9 The words for spelling should not be selected according to a special system (as per spelling book), but should be selected from the lessons of the pupil.

(3) H. H. SCHILLER[1] At the suggestion of Herr Schiller several tests were made by two different investigators for the purpose of verifying or refuting the results of Dr. Lay. Schiller's conclusions in general corroborated those of Lay, and indicated that in spelling, sight is a better aid than hearing, and that in the case of both sight and hearing the errors are decreased when these senses are reinforced by speech or writing movements. Following is the order of the value of methods as fixed by Schiller:

1 Copying, with soft speaking.
2 Copying, with loud speaking.
3 Seeing, with writing movement.
4 Oral spelling.
5 Seeing, with speaking aloud.
6 Seeing, with soft speaking.
7 Seeing alone.
8 Hearing, with writing movement.
9 Hearing, with loud speaking.
10 Hearing, with soft speaking.
11 Hearing alone.

(4) F. W. SMEDLEY[2] Dr. Smedley conducted a series of tests to ascertain the different kinds of memory among Chicago school children, with special

[1] *Studien und Versuche über die Erlernung der Orthographie.* Samm V. Abhand. *a. d. Gebiete der päd. Pysch. und Phys.* II. *Bd.* 4 *Heft,* Berlin, 1898. *See Pedagogical Seminary,* Vol. 13, p. 485.

[2] Report of the Department of Child Study and Pedagogical Investigation, Chicago Public Schools, *Child Study Report, No.* 3.

reference to spelling. He used a series of digits. In one case the pupils were asked to reproduce the digits after hearing them read; in another test they reproduced the digits after looking at them; and finally the children wrote the digits on paper while the series was dictated and also exposed on a card, the pupils turning the face of their paper downward at the close of the dictation and reproducing the series from memory on test paper. It was found impossible to test different memories as isolated powers, for the reason that in spite of admonitions to the contrary the pupils moved their lips and throats while the hearing and sight tests were made. Among Dr. Smedley's inferences are these:

1 There is probably a place for oral spelling.

2 There should be some pronunciation of syllables with spelling.

3 The words presented to the child at first should be, as far as possible, phonetic in their spelling, the more unusual forms being reserved for later years when the eye memory has become stronger.

4 The spelling of words is rendered automatic through practice in writing them.

(5) H. E. KRATZ[1] The experiments of Lay and Schiller were repeated in America by Mr. Kratz, who has published his results in a book. He used English nonsense words of ten letters each,

[1] "Studies and Observations in the School-room." H. E. Kratz, Educational Publishing Company, Boston, 1907.

and made the following three tests upon 743 elementary school pupils: (*a*) the auditory; (*b*) the visual; (*c*) and the audo-visual. For the first, ten words were used, the letters of which were pronounced slowly and distinctly, the pupil being required to write immediately the letters named in the correct order. In the second test, the words were printed on cards and held up for a few moments before the pupil, who was then commanded to write what he had seen. The children were cautioned not to use their lips, but in spite of their efforts to inhibit muscular movements they exhibited a strong tendency to whisper the letters to themselves. It will be remembered that Schiller came upon the same important fact. In the audo-visual test appeal was made to eye and ear by holding up the card and requiring the pupils to repeat the letters in concert. Following are the results of these three tests:

	Method	*Per cent of correct results*
1	Auditory	44.8
2	Visual	66.2
3	Audo-Visual	73.7

Upon these data and others obtained by an experiment as to the relation of the general power of observation to the spelling habit, Mr. Kratz bases the following inferences:

1 Poor spelling is largely due to inability to picture the word correctly in the "mind's eye" and this inability is largely due to careless or weak observation.

2 Defective vision is often a serious handicap.

3 The average child retains more from visual than from auditory impressions. Therefore in the preparation of the spelling lesson we must lead him to appeal as strongly as possible to his sense of sight.

4 In primary grades the spelling lesson should be studied with the assistance of the teacher at the blackboard. Words should be written, shown for a moment, then erased or hidden while the children write.

5 In all grades teachers should vary the spelling exercises by requiring about two-fifths of the words to be spelled orally, with syllabication and pronunciation of syllables.

(6) EDWARD R. SHAW[1] The late Dr. Edward R. Shaw repeated the experiments of Kratz about the same time that Lay was making his tests in Germany. He does not publish a table of results, but states that some two thousand children were examined with nonsense words. Among his conclusions are these:

1 The strong tendency of children to use the lips in spelling to themselves is significant in suggesting that the motor speech apparatus should be turned to use in learning to spell.

2 Preparation for spelling should be oral, while the final test should be written.

3 Spelling is a matter of association; and the eye, the ear, and the motor elements must be appealed to.

[1] The Spelling Question in "Three Studies in Education." E. L. Kellogg Co., New York, 1899.

(7) Dr. J. M. Rice In the April and June numbers of the *Forum* for 1897, Dr. Rice published the results of an extensive and thorough investigation of spelling in twenty-one schools representing every section of the United States. Over thirty-three thousand children were tested, fifty words being given to fourth and fifth year classes, and seventy-five words to the sixth, seventh, and eighth year classes. He also tested the spelling of many of the children by means of a composition based on a story prepared for the purpose. Following are the words used in the two tests:

(*a*) Fourth and fifth years: running, slipped, listened, queer, speech, believe, weather, changeable, whistling, frightened, always, changing, chain, loose, baking, piece, receive, laughter, distance, choose, strange, picture, because, thought, purpose, learn, lose, almanac, neighbor, writing, language, careful, enough, necessary, waiting, disappoint, often, covered, mixture, getting, better, feather, light, deceive, driving, surface, rough, smooth, hopping, certainly.

(*b*) Sixth, seventh, and eighth years: The above list with the following omitted: because, thought, writing, language, feather, light, surface, rough, smooth; and the following added: grateful, elegant, present, patience, succeed, severe, accident, sometimes, sensible, business, answer, sweeping, properly,

improvement, fatiguing, anxious, appreciate, assure, imagine, peculiar, character, guarantee, approval, intelligent, experience, delicious, realize, importance, occasion, exceptions, thoroughly, conscientious, therefore, ascending, praise, wholesome.

These words were not dictated in columns, but were included in sentences, *e. g.*, "While running he slipped. I listened to his queer speech, but I did not notice any of it."

The schools tested represented every degree of excellence, all sorts of methods, all kinds of pupils, and many diversities of street and home environment, and of nationality. The time devoted to spelling in the several schools varied from six minutes a day to fifty minutes a day.

1 The author arrives at the sweeping conclusion that *none of these things make any difference in the spelling.* "In brief," he adds, "there is no direct relation between method and results. The results varied as much under the same as they did under different methods of instruction." He says there is no clear choice between oral and written spelling or between writing isolated words and writing sentences. Phonic reading does not make bad spellers, nor do written language work and wide general reading make good spellers.

2 A second inference made by Dr. Rice, is ex-

pressed in the following words: "The facts here presented, in my opinion, will admit of only one conclusion, *viz.*, that the results are not determined by the methods employed, but by the ability of those who use them. In other words, the first place must be given to the personal equation of the teacher, while methods and devices play a subordinate part."

3 Dr. Rice maintains further that with fifteen minutes of instruction each day children will learn just as much spelling as if they have more; and hence anything above this limit is time wasted.

(8) Miss E. K. Carmen[1] Dr. Edward L. Thorndyke of Columbia University, in commenting on the work of Dr. Rice (which upon the whole he pronounces excellent), says we may add another lesson gained from a mistake of the author's. He refers to Dr. Rice's conclusion that methods, devices, nationality, environment, quality of school, etc., have no causal relation to success in spelling. "Dr. Rice's desertion of facts for opinion," says the critic, "was hasty, for there are real causes for good and bad spelling other than the one he opines" (personal

[1] *Teachers' College Record*, May, 1901, p. 87. Columbia University Press, New York.

equation of the teacher). Dr. Thorndyke then proceeds to quote from the study of Miss Carmen[1] to substantiate his contention. This lady started with the hypothesis that poor spelling is due to poor observation of the words. The subjects of the experiment were sixteen adults, all of whom had completed a high school course and had spent two years more in study. There were eight good spellers and eight poor ones. The test was a printed page from Appleton's Fourth Reader, containing one hundred misspelled words. The subjects were asked to go through the paper as quickly as possible and mark each misspelled word. The results were as follows:

	Time in seconds	*Words omitted*
Good spellers (average)	130.1	8.9
Poor spellers (average)	199.6	28.1

1 Miss Carmen's inference is that ability to spell probably implies not a *general* habit or power of observation, but a *special* ability to notice small differences in words.

2 Dr. Thorndyke adds: "Whether any specific methods can be used in the class-room to secure the habit of attention to the spelling of words during reading is still a question. It would seem likely."

[1] *Journal of Pedagogy*, October, 1900.

3 By way of criticism on Miss Carmen's inference, Dr. William H. Burnham says:[1] "Miss Carmen is probably right in this inference, but a number of other factors doubtless contribute to the ability to spell well as suggested by the complexity of the mental process. Whether poor power of observation for small differences in words is the cause of the inability to spell, or whether improper training in spelling is one cause of the lack of observation for small differences, there is at least an interesting correlation here. It is probable, however, that the special training in spelling does not contribute to general power of observation." Miss Carmen, Dr. Thorndyke, and Dr. Burnham, therefore agree that Mr. Kratz's inference is erroneous, when he argues that "nature study is tending to improve our spelling."[2] Dr. Thorndyke[3] also calls attention to the fact that Miss Wyckoff refers poor spelling to a "quality of aatention in general rather than to a particular habit of attending to words."

(9) OLIVER P. CORNMAN[4] Mr. Corman made the following kinds of tests:

[1] *Pedagogical Seminary*, Vol. 13, p. 498.

[2] "Studies and Observations in the School-room," p. 140. Educational Publishing Company, Boston, 1907.

[3] *Teachers' College Record*, May, 1901, p. 87.

[4] "Spelling in the Elementary Schools." Ginn & Co., Boston, 1902

(*a*) Lists of spontaneously selected words — the largest number that could be written in fifteen minutes.

(*b*) Lists of specially selected words written in vertical columns from the dictation of the teacher.

(*c*) Series of short sentences (containing selected words) written from the dictation of the teacher.

(*d*) Spelling papers of the regular term examination set by the superintendent of schools.

(*e*) Compositions and other written exercises of the regular schoolroom work.

(*a*) *The Fifteen-minute Test* Only the first of these tests was studied with a view to the psychology of the subject. Great care was taken to secure uniformity of conditions. A simple set of explicit directions was prepared and read to the pupils, who were told to begin at a given signal and write as many words as they could, using any words at all that they might happen to think of. These words were written in vertical columns, and at the end of fifteen minutes the signal to stop was given and the papers were collected. The tests were given in June three years in succession in the same schools.

Following is a specimen table, slightly modified, showing the kind of results obtained:

North West School Fifteen-minute Test June, 1897

TABLE I

School Year	No. of Pupils		Average No. of words per pupil		Per cent Spelled Correctly	
	Boys	Girls	Boys	Girls	Boys	Girls
8th	33	46	245	212	95.8	98
7th	26	28	239	186	95.2	97.4
6th	53	69	202	201	92.6	96.8
5th *a*	24	18	169	189	92.3	95.8
5th *b*	38	31	163	132	94.3	95
4th *a*	23	23	138	154	90.1	94.2
4th *b*	16	16	164	136	95.2	95.3
3d *a*	19	20	132	101	91.4	94.4
3d *b*	24	19	69	81	88.1	92
Totals	256	270				
Average or per cent			179	169	93.4	96.1

The inferences drawn by Mr. Cornman from a series of tables like the above are briefly as follows:

1 The pupils in the elementary school increase regularly from grade to grade in the quantity and quality of their spontaneously written words, and in accuracy of spelling.

2 The average results established by this method are constant within small limits of variation and may be utilized as normals to compare the work of

individuals or of classes, under varying pedagogical conditions.

3 The boys show a more rapid rate of movement than girls, but the girls excel markedly in legibility and correctness of spelling.

4 The difference of results in the sexes is accounted for by the conclusion that the boys followed the directions "to write as many words as they could." They were more interested in the quantity than the quality of their productions, while the girls fell short of the quantity by their conscientious attention to details of execution. These conclusions are supported by the fact that the boys had more illegible and nonsense words than the girls, and the girls had many more careful erasures and substitutions than the boys.

5 The pedagogical corollary may be drawn here that boys need training in attention to details, and girls require stimulation to the accomplishment of larger purposes.

6 The rate of movement and the accuracy of spelling tend to vary together, and both are functions of general mental capacity.

(*b*) *Analysis of Errors* The examination and classification of errors of spelling found in the spontaneously written words of the children is probably Mr. Cornman's most valuable contribution to the

psychology of spelling. The scheme of classification was worked out in the psychological laboratory of the University of Pennsylvania by Professor Lightner Witmer, Dr. Oscar Gerson, and Mr. Oliver P. Cornman. It was discovered by these investigators that the characteristic spelling errors bear an essential similarity to the phenomena of aphasia. The general type of mental activity is analogous to the function of a ganglion with its afferent and efferent nerve-attachments. If there is any disorder in the afferent nerve, or the sensory elements which convey the impulse to the central organ, the ganglion cannot perform its proper function. If the difficulty is in the efferent nerve, or any of the elements involved in motor expression, the ganglionic function is interrupted. Now, aphasia is the total "inability or partial disability of an individual to make outward expression of thoughts, feelings, or other states of consciousness, whether such disability result from interference with the formation of the mental content or the emission of it."[1]

"Spelling is a sensori-motor habit which expresses itself in every concrete instance of the spelling of a word as a synthetized motorial reaction following, at more or less remote temporal intervals, certain

[1] Collins, Joseph: "The Faculty of Speech." Macmillan, New York, 1898.

complicated sensory stimulations."[1] Errors in orthography are therefore more instructive than correctly spelled words, because they may be viewed as a mild form of aphasia. Mr. Cornman's plan of classification is based upon the aphasic conception of spelling errors:

TABLE II

Analytic Classification of 2851 Spelling Errors

(Modified)

Number of Pupils		*Boys* 251	*Girls* 251	
I	Motor Inco-ordination		Total, Boys and Girls	
	1 Omission		409	
	2 Addition		183	
	3 Change		178	
	4 M and N		109	
	5 Transposition		193	
	6 Wrong letter doubled		18	
	7 Attraction (S–M)		150	
	8 Attraction (I–M)		48	
	Total		——	1288
II	9 Complication			125
III	Sensory Inco-ordination			
	(*a*) Phonetic			
	10 Standard		233	
	11 Local and Individual		364	
	(*b*) Confusing			
	12 ei, ie, or, er, etc.		460	
	13 Doubling		145	
	14 Non-Doubling		151	
	(*c*)15 Unclassified		85	
	Total		——	1438
	Grand Total			2851

[1] Cornman, p. 5.

(*c*) *Explanation of Table II.*

MOTOR INCO-ORDINATION "All those classes of errors whose commission seems to have been predominantly determined by defect in motor process."

1 *Omission* Where one or more links (letters or syllables) in the chain of associations are dropped out; *e.g.*, hoase (hoarse), Main (Maine), tortose (tortoise), sureying (surveying).

2 *Addition* "Where one or more supernumerary letters or syllables appear; *e.g.*, wolfe (wolf), tarble (table), pianono (piano)."

3 *Change* "Where a letter is so incompletely formed as to constitute a different letter, or where one letter is unaccountably substituted for another; *e.g.*, trumb (thumb), crach (crack), sise (six)."

4 *M and N* "The confusion of m and n for each other is a special case of 3; *e.g.*, swin (swim), primpts (prints), Jin (Jim)."

5 *Transposition* Where letters or syllables are transposed; *e.g.*, aminal (animal), chian (chain), gril (girl).

6 *Wrong Letter Doubled* This is an error related to 5. The doubling is shifted to the wrong letter; *e.g.*, speel (spell), dool (doll).

7 *Attraction* (*Sensori-motor*) "A letter or arrangement of letters in a previously written word calls out a similar form where it should not occur; *e.g.*,

roap (rope) follows soap; cloes (clothes) follows shoes; or a prominent letter in a word calls out an incorrect repetition of that letter or a substitution of it for a correct letter in a latter part or syllable of the same word; *e.g.*, Missiouri (Missouri), sunsut (sunset)."

8 *Attraction* (*Idea-Motor*) "A letter or arrangement of letters in a succeeding word calls out a wrong form. Both words have been held together in idea, but the order of subscription has not followed the order of ideation; *e.g.*, groop (group) precedes troop, stateau (statue) precedes plateau."

9 *Complication* "Those errors which seem to be due to a combination of defective functioning of both sensorial recall and motorial expression." It usually results in a mere jumble of letters; *e.g.*, amanole (animal), pienishel (peninsula).

Sensory Inco-ordination "All those classes of errors whose commission seems to have been determined by defect in sensory processes, the literal association having been improperly formed; or, if properly formed, forgotten or changed from the conventional order." Of this class of errors there are three kinds: *Phonetic*, *Confusing*, *Unclassified.* Of the phonetic class there are two sub-classes (10 and 11) and of the confusing class there are three sub-classes (12, 13, 14).

10 *Standard* This is a case of phonetic sensory inco-ordination "where the spelling is largely determined by phonetic analogies and on the basis of an approximately standard pronunciation; *e.g.*, Wensday (Wednesday), scolar (scholar), ismus (isthmus)."

11 *Local and Individual* A case of error belonging to the phonetic-sensory-inco-ordination class "where a more or less faulty or incorrect pronunciation . . . is the basis on which the attempt to follow phonetic analogy is made; *e.g.*, chimley (chimney), hooken-later (hook and ladder), Henery (Henry)."

12 *Ei, ie; er, or, etc.* Sensory inco-ordination of the "confusing" class has several varieties. One arises from the confusion of ie and ei; tion, sion; or, ar, er; ey, y; able, ible, etc.; *e.g.* grammer (grammar), liley (lily), etc.

13 *Doubling* A second species of "confusion" is using double letters for single ones; *e.g.*, Hellen (Helen), gass (gas), Pannama (Panama).

14 *Non-Doubling* The third kind of "confusion" is the reverse of the preceding, omitting to double a letter; *e.g.*, galons (gallons), weding (wedding).

15 *Unclassified* "Includes all those errors not treated under any of the other classes; *e.g.*, Scuylkill (Schuylkill), handerchief (handkerchief), etc."

(*d*) *Inferences Drawn from the Study of Errors.*

1 Boys show a larger percentage (54.8) of motorial inco-ordination than girls (44.8). This excess of error by defect of motor process on the part of boys may be accounted for by the direction of their attention to the completion of a word as a whole, while the superiority of the girls may conversely be ascribed to their care in the formation of each letter. The same considerations account for the fact that boys write more words than girls, but girls are better spellers.

2 The practical effect for good of the teaching of spelling rules is a question of method, which itself needs investigation.

3 There is no "best method" of teaching spelling. Educational progress has been seriously retarded by the exploitation of panacea methods. Oral spelling, written spelling, syllabic spelling, "photographic" spelling (spelling a word after it has been photographed upon the mind by a single glance!), have all been severally championed as possessing exclusive pedagogic virtue.

4 "The wise teacher will acquaint herself with as many methods and devices as possible, and change from one to the other, in order to relieve the tedium and meet the needs of individual children," some of whom belong to the visual type, some to the auditory, some to the motor, and some to the mixed.

5 The difference in results in spelling would seem to lie, not in specific method, but in effectiveness of *administration*, *i.e.*, the personal efficiency of the teacher or principal.

6 The specific spelling lesson, taught, studied, and recited in oral or written form, is but a trifling proportion of the total stimulation afforded by the environmental influences of school, home, and outdoor life to which the average pupil is subjected. In school almost every lesson is contributory to spelling, and every written or printed word which is seen in street advertisement or is met with in home reading registers its effect upon the mind of the pupil.

7 We may regard the complex act of writing connected discourse (the ultimate goal of school training in spelling) as an entire situation which should be departed from in practice as little as possible. Hence the spelling lesson should most frequently take the form of connected written discourse.

8 "These conclusions indicate the comparative unimportance of the spelling drill as contributory to accuracy in spelling."

IV

Conclusions Derived From the Nature, Value, and Psychology of Spelling

From the Nature of Spelling

1 The process of spelling involves a knowledge of the following elements: pronunciation, syllabication, capitalization, abbreviations, contractions, compounds, plurals, possessives.

2 The necessity for spelling arises as soon as the child is required to write words and sentences. This locates the beginning of spelling in about the second year of school.

3 On account of the oriental origin of our alphabet, the Norman conquest of England, the variant practice of authors and copyists, and the vagaries of printers before the era of dictionaries, English orthography is arbitrary; and therefore the speller is assisted but slightly by reason and rules.

4 Spelling is not a culture study, but a necessary art, which should be made automatic as soon as possible.

5 Spelling has an important conventional value. One receives little credit for being a good speller, but is in danger of losing position and prestige for being a poor one.

From the Psychology of Spelling

6 The knowledge of the derivation of words is advantageous in orthography as a means of fixing the attention on word forms (Lay, Wyckoff).

7 According to Lay, the various ways of preparing a spelling lesson rank in the following order, beginning with the most efficacious:

(1) Copying (with low speaking).
(2) Spelling orally (loud).
(3) Seeing (with speech movement — reading.).

8 In orthography, script spelling books surpass printed books: they are about twice as valuable as material for sense perception (Lay).

9 Cultivation of correct pronunciation is of great importance for learning orthography (Lay, Smedley).

10 As much as possible the sense of a word (apperceptive aid), the pronunciation, and the writing must be united, and the motor presentation in writing is the determining factor (Lay, Shaw, etc.).

11 Dictation should be used in spelling only as a test (Lay).

12 The so-called copying method, including the writing down of sentences from memory, is useful since it is most closely related to the orthographic practice in common life.

13 The words for spelling should not be selected according to a special system (as per spelling book), but should be selected from the lessons of the pupil (Lay).

14 The words presented to the child at first should be, as far as possible, phonetic in their spelling, the more unusual forms being reserved for later years (Smedley).

15 The spelling of words is made automatic through practice in writing them (Smedley).

16 The average child retains more from visual than from auditory impressions (see No. 7).

17 The strong tendency of children to use the lips in spelling to themselves is significant in suggesting that the motor speech apparatus should be turned to use in learning to spell (Shaw; see No. 7).

18 Spelling is a matter of association, and the more clues there are for memory, the better are the chances of recall (see No. 7). Hence as many senses as possible should be employed in learning to spell.

19 Results in spelling are determined not so much by the methods employed as by the ability of those who use them (Rice); in other words, results

depend chiefly upon effectiveness of administration (Cornman).

20 Ability to spell probably implies not a general habit or power of observation, but a special ability to notice small differences in words (Carmen). Mr. Kratz is therefore wrong when he argues that "nature study is tending to improve our spelling."

21 The pupils in the elementary school increase regularly from grade to grade in the quantity and quality of their spontaneously written words, and in accuracy of spelling (Cornman).

22 Boys show a more rapid rate of movement (in spontaneously written words) than girls, but girls excel markedly in legibility and correctness of spelling (Cornman).

23 The rate of movement and accuracy of spelling tend to move together, and both are functions of general mental capacity (Cornman).

24 Boys show a larger percentage (54.8) of motorial inco-ordination (errors of spelling due to motor defect) than girls (44.8). This excess of error on the part of boys may be accounted for by the direction of their attention to the completion of a word as a whole, while the superiority of the girls may be ascribed to their care in the formation of each letter (Cornman).

25 The practical effect of the teaching of spelling

rules is a question of method, which itself needs investigation (Cornman; see No. 3).

26 There is no "best method" of spelling (Cornman).

27 The wise teacher will acquaint herself with as many methods and devices as possible, and change from one to the other, so as to adapt herself to the various types of children; namely, the visual, the auditory, the motor, and the mixed (Cornman).

28 The specific spelling lesson in school is but a trifling proportion of the total stimulation afforded by the environmental influences of school, home, and outdoor life. In school every lesson is contributory to spelling, and every written or printed word which is seen in street advertisement or home reading registers its effect upon the mind of the pupil (Cornman).

29 We may regard the complex act of writing connected discourse (the ultimate goal of school training in writing) as an entire situation which should be departed from as little as possible. Hence the spelling lesson should most frequently take the form of connected written discourse (Cornman).

30 Evidence points to the comparative unimportance of the spelling drill as contributory to accuracy in spelling (Rice, Cornman). Lay goes so far as to say that the traditional spelling lesson should be omitted and forbidden by law, on account of the time wasted by it.

V

Methods of Teaching Spelling

I The Selection of Words

The first question that the spelling problem presents is the selection of words to be spelled. "What shall we spell?" must be answered before "How shall we spell?" This brings us at once face to face with the question of the spelling book.

(1) Arguments in Favor of the Spelling Book The arguments in favor of the spelling book are many. Here are a few:

(*a*) The spelling book is convenient and systematic. It presents a ready-made list of words which, it is assumed, the children ought to know. "In the spelling book and its proper use seems to rest the hope of the coming generation of spellers. Yet too many of the spelling books now in use are thrown together on no recognizable principle and afford no opportunity to the pupil to discover a relation between his lesson and his own attainments. What is important is that he form the *habit* of spelling accurately

the words that belong to his range of thought, and that he continue the process when he advances to higher studies. We may therefore urge that the territory to be covered by the spelling course should be narrowed as much as possible, and that words that offer no difficulty and words that offer too great difficuty should alike be weeded out. There remains, then, a fundamental vocabulary which belongs to everyone who speaks or writes at all. This vocabulary is not capable of precise delimitation according to the school grade of the pupil, but it can be roughly determined by co-operative study on the part of teachers." [1]

(*b*) The author of a spelling-book is more likely to possess the intelligence necessary to insure a good selection than the average teacher or principal.

(*c*) Words selected at random in the schoolroom are unsystematic and not graded in the order of difficulty.

(*d*) Again, words selected at random to meet the demands of the class-room are not likely to meet the requirements of later life as well as those selected after a discriminating consideration of all the words in the language.

(*e*) To the foregoing arguments we may add,

[1] Wm. E. Mead, Wesleyan University, Middletown, Conn., on "Is Spelling a Lost Art?" in *Educational Review*, Vol. 19, p. 49.

finally, that the children, in copying words into their note-books, frequently make mistakes, and thus have the wrong form impressed upon the memory. Furthermore, this copying consumes no small amount of time which might be more profitably employed.

(2) ARGUMENTS AGAINST THE SPELLING BOOK Some of the objections against the spelling book are the following:

(*a*) The first is that it violates the principle of utility. A list of words selected for the average child does not satisfy the needs of any child. "I look upon the whole business of spelling, as generally conducted, to be an enormous waste of time, labor, and patience — an unsatisfactory method of gaining a very important accomplishment. . . . The time for learning to spell words correctly is when they are first used and represented to the eye in print."[1] "In English, as in everything else, children must be taught the rudiments first. Not that I would replace the spelling book in its former commanding position in the schools, and compel boys and girls to learn long lists of words which they would have no occasion to use; but everyone should be able to spell the words that are often on his lips,

[1] Zalmon Richards, Washington, D. C.: "The English Language in Elementary Schools," N. E. A., '77, p. 175.

or often under his eye in the books he studies or reads."[1]

(*b*) Such a list also violates the principle of interest. It is, at least, an open question whether words should be taught with a view to future use or immediate use. The pupil is not much interested in what he will need ten or twenty years hence. But he is interested in words that grow out of his daily work, that enable him to master the contents of the course of study. "It is very doubtful whether the modern spelling book, with its barren list of words made up on the principle of similarity of sound, is not the greatest foe of good spelling. The really necessary thing is to acquire the habit of taking in with the eye the correct spelling of each new word as it is presented, and preserving the image in the mind."[2]

(*c*) Most of the spelling books have many words that it is not worth while to spell, either because they present no difficulty of spelling, or because they do not occur in any of the lessons of the pupils. The writer learned to spell *caoutchouc* many years ago in the public school, and he has not once had occasion to use the word since. He learned hundreds of other

[1] Adams Sherman Hill: "Our English," *Harper's*, New York, 1889, p. 16.

[2] Wm. H. Maxwell: *Educational Review*, Vol. 3, p. 477.

words of like nature. If a child is properly trained to use a dictionary he will look up such strange and unusual words when he meets them in his reading. Hence, their spelling, for the mere sake of drill and a possible future contingency, seems to be a waste of time. The ordinary spelling book has, at least, two useless words for every useful one.

(*d*) Finally, it is held by one investigator that script spelling books are about twice as valuable as printed books for purposes of sense-perception. (Prop. 8.)

(3) PRINCIPLE OF SELECTION In the light of the preceding discussion it is possible to formulate several principles which should guide the teacher in the selection of spelling words.

(*a*) *Familiar as to Meaning* The first principle is that the spelling words should be familiar as to meaning. To require children to spell words they cannot use is manifestly a waste of time; for the only occasion we have for spelling at all is when we employ words in written discourse.

(*b*) *Some Difficulty of Spelling* In the second place, words in the spelling list should present some difficulty of spelling. Their meaning may be already known, and, therefore, no time need be devoted to their definition and use. To this class belong such words as *which, Tuesday, island, physician, giraffe,*

comb, until, cigar, tough, knife. The meaning and use list, on the other hand, contains words whose meaning (which may be new to the children) must be known in order to master the subject matter of the grade. They may or may not present difficulties of spelling. If they do, both the spelling and the meaning must be taught. The class readers in literature, geography, and science will supply many spelling words.

Another prolific source for the supply of spelling words, as well as for grammatical and dictation exercises, is found in the class compositions. Here the children reveal their peculiar infirmities, and thus the teacher is able to prescribe the specific remedies demanded by their case. Every time a set of compositions is corrected a sheet of paper should be at hand, on which are indicated the common errors of spelling, construction, punctuation, and the like. The misspelled words should be added to the spelling list, while other errors should be kept for use during the grammar and dictation periods. Of what use is it to a child to be able to spell the hundreds of test words found in a printed speller, if he cannot write a letter of ten lines without misspelling a dozen ordinary words which he has occasion to use? Many teachers take compositions home and laboriously correct the numerous errors found

therein. This is all labor in vain unless an effort is made in the spelling period and in other language exercises to drill the pupils on the forms in which they have failed.

(*c*) *Phonetic Words at First* One authority who has investigated the psychology of spelling has come to the conclusion that the words selected for the child's first efforts in spelling should be phonetic in character, the more unusual forms being reserved for later years (Prop. 14). As this requirement follows the law of sequence from the easy to the difficult, its observance is in accordance with our practice in other subjects.

2 Principles of Method

The various principles derived from the psychology of spelling will now be discussed in so far as they apply to methods of teaching spelling.

(1) ENGLISH SPELLING ARBITRARY The first important consideration with respect to English spelling is that reason is of slight assistance in the process. The present forms of words had their origin in many cases in the vagaries of early printers and copyists (Prop. 3). The consequence is that no rules can be formulated that are not limited by numerous and confusing exceptions. On account

of these exceptions it is not safe to spell by rule, for it is almost impossible to remember for any length of time whether a given word one happens to be writing is spelled according to the rule, or according to the exception. One writer has well said that spelling rules are useful chiefly to prove how useless they are. It remains an open question, therefore, whether it is economical and humane to burden the memory of children with these rules, or whether spelling is not equally successful without rules.

(2) NOT A GENERAL HABIT Spelling is primarily a sensori-motor habit acquired, like any other habit of this kind, by repeated motor reaction to certain sensory *stimuli*. The motor images of separate letters are learned in the first writing lessons. The combination of the writing-movement images of separate letters into motor images of syllables and words is the germ of all instruction in spelling. This is a very complicated process. Numerous sets of muscles must act in harmony, in a definite sequence, with definite strength, rapidity, and accuracy. As Miss Carmen has shown (Prop. 20), the power to spell is not a general habit, but a special ability. We cannot improve spelling by introducing nature study to train the observation, any more than we can learn to ride a bicycle by practice in skating, or learn percentage by drill on square root. In order to learn

anything we must exercise the particular mental and physical functions involved in that thing, rather than some other functions. In other words, the way to learn to spell is to spell.

(3) PREPARATION OF THE LESSON.

(*a*) *Pronunciation* Cultivation of correct pronunciation is of great importance in learning to spell (Prop. 9).

(*b*) *Syllabication* It has been suggested that the pronunciation of certain syllables in oral spelling is an aid to the memory. In presenting the word in written or printed form it may likewise be an advantage to exhibit the syllables. This should be done by widening the space between syllables rather than by the use of the hyphen. The hyphen has a distinct use in hyphenated compounds and in cases where a part of a word is carried to the line below. To use the hyphen in syllabication leads to confusion.

(*c*) *Derivation* A knowledge of the derivation of words is advantageous in orthography as a means of fixing the attention on word forms (Prop. 6). In fact, the writer depends far more on his knowledge of derivation than on his knowledge of rules. The key to the double *r* in *Mediterranean* is *terra;* the double *n* in centennial comes from *annus*. *Separate* is never troublesome after you know that it comes from *paratus*.

(*d*) *Visual vs. Auditory Images* Many authorities agree in the conclusion that the average child retains more from visual than from auditory impressions (Prop. 16). In teaching little children to spell, therefore, more is accomplished by exhibiting the written or printed form of the word than by the oral presentation of the spelling. Lay says the visual image is three times as valuable as the sound image.

(*e*) *The Copying Method* After experiment with many forms of presentation, Lay comes to the conclusion that *copying, with low speaking*, is the most efficacious. According to this plan the child prepares his spelling lesson by copying the words and saying over the letters softly to himself at the same time. Next in order of merit is saying the letters over to one's self in a loud voice without writing. The third in order of merit is seeing the letters, with speech movement (Prop. 7). The so-called copying method, including the writing down of sentences from memory, is useful because it is most closely related to the orthographic practice of common life (Prop. 12).

(*f*) *Motor Images of Speech* The strong tendency of children to use the lips in spelling to themselves is significant in suggesting that the motor speech apparatus should be turned to use in learning to spell (Prop. 17). In all the experiments recorded

by Lay, Shaw, Kratz, and others, the results of other methods were uniformly better when accompanied by speech than without the use of speech.

(*g*) *Automatic Through Writing* Since spelling is essentially a motor habit, it is made automatic through practice in writing (Prop. 15). The only use we make of spelling is when we are writing.

(*h*) *Combination of Senses* It is evident from the preceding discussion that a combination of senses in learning to spell is more effective than the use of any single sense. The sight is more valuable than hearing; the motor image of speaking and the motor image of writing are very important. Why not combine all these elements, if possible, in a single process? Spelling is a matter, psychologically, of association, and the more clues there are for memory, the better are the chances of recall (Prop. 18).

(*i*) *Connected Discourse* We may regard the complex act of writing connected discourse as an entire situation which should be departed from as little as possible. Hence the spelling lesson should most frequently take the form of connected written discourse (Prop. 29). "Spelling can be best taught from the sentence, which gives to words meaning and life. Greater stress should be laid upon the written expression of thoughts, either from dictation, or from memory, or as original spelling; and the pupil's

vocabulary should be extended in such direction as to enable him to use, spell and write words seen or required in his daily exercise." [1]

This procedure has the added advantage of enabling us to teach the meaning and use of words (along with spelling), by the natural or inductive method. By copying, studying, and writing from dictation selections from the best authors, the pupil learns meanings from the context and at the same time increases the power to put his own thoughts into clear and pertinent language. A number of spelling books embodying this principle have been published. The following exercise is quoted from one of these: [2]

"The first set of teeth, twenty in number, is developed between the ages of six months and three years. The second, or permanent set, commences to replace the first at the age of six or seven. The names of the teeth are incisors, canines, bicuspids, molars, or grinders. The wisdom teeth do not usually appear until the twenty-first year of life."

Another dictation-speller [3] presents the lesson in the form of a quotation from a standard author.

[1] Edgar A. Singer, Philadelphia: "What Constitutes a Practical Course of Study?" N. E. A., '80, p. 120.

[2] Campbell's Reading Speller. Taintor Bros. & Co., New York, 1883.

[3] "Dictation Day by Day." Kate Van Wagenen. Macmillan, New York, 1909.

(*j*) *No "Best Method"* There is no "best method" of teaching spelling (Prop. 26). The wise teacher will acquaint herself with as many methods and devices as possible, and change from one to the other, so as to adapt herself to the various types of children; to wit, the visual, the auditory, the motor, and the mixed (Prop. 27).

(*k*) *Homonyms* Professor Burnham[1] has shown that in teaching spelling it is important to avoid interference of association. The process of writing words involves a very complicated set of mental and physical activities, such as concepts, images of form, images of movement, conflicts, motives, decisions, etc., and, therefore, interference is liable to occur. Examples are the noun *advice*, and the verb *advise; principle*, a rule of conduct, and *principal*, a person. In the teaching of homonyms, it is usual to present them simultaneously. The result is likely to be interference of association. The similarities, which are supposed to assist the memory, are in reality a source of confusion. It is recommended, therefore, that each one of a pair of homonyms be presented apart from the other, so that the peculiar spelling may be thoroughly associated with the meaning.

(4) THE TEST After the lesson has been pre-

[1] *Pedagogical Seminary*, Vol. 13, p. 439: "The Hygiene and Psychology of Spelling."

pared, either in class, with or without the teacher's assistance, or at home, it is usual to test the pupil to find out whether he can spell the words he studied. The usual form of the test is the dictation; and this may consist of column spelling or sentence writing. Mr. Cornman has found that the smallest average variation in spelling tests appears in written language. Lists of test words give more variable results, the widest variation being brought out by the examination papers officially prescribed as a test for the promotion of pupils. This is easily accounted for by the fact that such test words are arbitrarily selected by the examiner, sitting at a distance, without reference to the particular words that may have been taught in the different schools. It is an assumption that a pupil of a given age ought to know the words specified. If the words happen to belong to the pupil's vocabulary, he may be able to spell them; if they are entirely new, he guesses at their spelling; and as English spelling is without law and seldom phonetic, he generally guesses wrong. In view of the fact that arbitrarily selected exercises in dictation and spelling introduce the very variable factor of the judgment of the examiner, Mr. Cornman has come to the conclusion that a method of basing the estimation of proficiency in spelling upon the pupil's written language would be a more equitable way of meeting

the demand for examination data. The objection to dictation, however, would not hold in the case of a teacher or principal dictating words previously assigned for spelling. But the spelling in the pupil's original composition is not altogether a safe guide for the estimation of his spelling ability, for the reason that he avoids spelling difficulties by substituting words which he can spell.[1]

(*a*) *Teaching and Testing* A confusion exists among teachers as to the functions of teaching and testing. Much of so-called teaching is nothing but testing. Both of these processes are indispensable, but we cannot substitute one for the other. You teach a pupil when you give him a method of acquiring knowledge or power or skill; when you help him to memorize, or to think, or to plan, or to construct. You test him when you try to find out how well he has succeeded in his learning, how much he remembers, how accurately he thinks, or how intelligently he plans and constructs. When a teacher writes ten problems on the board, and then sits back in his chair while the class solve the problems, he is

[1] The following anecdote is an illustration of the point:

A GOOD SUBSTITUTE — Jimmy had his weak points as an example of the result of modern educational methods, but his brain was of excellent quality.

When the teacher looked at him and inquired, coldly, "What is a synonym, James?" he was ready with his answer.

"It's a word that you can use when you don't know how to spell the one you thought of first," he replied, cheerfully.

not teaching, but testing the knowledge and skill of the children.

So, when one dictates a column of words to be spelled, he is merely testing, not teaching. What is called "hearing lessons" is usually testing what has been learned out of a book. Composition writing, under the guidance of a skillful teacher, is teaching. If the subject has been simply assigned and the children do all the work without suggestion or plan from the teacher, there is manifestly no teaching in the exercise. Dictation is a method of testing how well certain formal elements of written language have been mastered by the pupils. To develop or explain the meaning of a word is teaching; using the word in an original sentence is a test to see whether the meaning is properly understood by the pupil. The younger the child the more teaching and the less testing is required. In the first years of school life the pupil does so little for himself, especially in graded schools, that all the necessary testing may be done simultaneously with the teaching. As the pupil grows older he should also grow in self-dependence. The teaching partakes more and more of suggestion, and planning, and guiding, while the pupil is compelled to work out his own results. Hence, the test is necessary that we may know how faithful and successful he has been in accomplishing the task set for him.

In the secondary school this self-reliance becomes still more prominent, the pupil being compelled to do a larger share of the work at home, and thus each recitation is largely a test.

In collegiate and university instruction, the suggestive and guiding phase of teaching becomes still more prominent. The professor lectures; then the pupil is sent to the library and the laboratory, where he must work out his own salvation. The results are shown in the form of notebooks, themes, theses, and the like, all of which are methods of testing the acquisition of knowledge and power.

The test is not to be despised at any stage. It is to teaching what reaping is to sowing. He who teaches and never tests cannot possibly know whether his sowing ever brings forth fruit. He who tests and never teaches is reaping where he has not sown, and is sure to come to grief.

(5) SPELLING A SIGN OF GENERAL PEDAGOGICAL HEALTH In order to ascertain what relation exists between the specific spelling drill and accuracy of spelling, Mr. Cornman decided to abandon the use of the spelling book and home spelling lessons in the Northwest School in Philadelphia, of which he was principal, and also to omit from the school program the period which had been devoted to spelling. All teaching in spelling was done incidentally.

This does not mean that spelling was totally neglected. "Words liable to be misspelled were placed conspicuously before the pupils when they were engaged upon an exercise in which the words were likely to occur; pupils were taught to appeal, when in doubt, to the teacher and to the dictionary, and mistakes in written work were corrected as far as possible."

By numerous elaborate and varied tests the Northwest School was compared during a period of three years with the schools where the regular spelling drill prevailed. Mr. Cornman's inferences from this study are, briefly, as follows:

(*a*) The spelling result is a function of the general pedagogical health of the class. Given a class making fair progress in its general work, and its spelling result, *as measured by a composition test*, may be predicted with scientific accuracy, no matter what the daily procedure in spelling may have been.

(*b*) The Northwest School, during the three years in which the specific spelling drill was suspended, neither gained nor lost appreciably in spelling proficiency.

(*c*) The percentage of correctness of spelling for pupils of any school grade is a fairly constant quantity for the grade, whether the basis of comparison be written connected discourse or spontaneously written words.

(*d*) The degree of general mental development, as measured by the school grade of the pupil, is the most important factor in accuracy of spelling.

(6) INDIVIDUAL DIFFERENCES The principle stated in the preceding paragraph is modified by the fact that children differ in their natural ability to spell as they differ in other talents. Some are fond of mathematics and find no difficulty in mastering it; others acquire a knowledge of mathematics only after the most discouraging and most laborious efforts. Professor Thorndyke[1] presents the following as an example of differences in spelling ability between two pupils in same grade and class;

A	B
greatful	gratful
elegant	eleagent
present	present
patience	paisionce
succeed	suckseed
severe	survere
accident	axadent
sometimes	sometimes
sensible	sensible
business	biusness
answer	anser
sweeping	swepinge
properly	prooling

[1] "The Principles of Teaching," E. L. Thorndyke. A. G. Seiler, New York, 1906.

improvement	improvement
fatiguing	fetging
anxious	anxchus
appreciate	appresheating
assure	ashure
imagine	amagen
praise	prasy

In general, this principle of individual difference may be illustrated by saying that if the weakest pupil in the class can do five problems in ten minutes the best pupil will do at least twenty. While the poorest speller picks out fourteen mispelled words in a given passage, the best pupil picks out ninety-four. In a word, the best pupil in a class will have in any one trait an ability from two to five times as great as the poorest pupil.

(7) SPELLING DRILL The investigations of Rice and Cornman point to the comparative unimportance of the spelling drill as contributory to accuracy in spelling. Lay goes so far as to say that the traditional spelling lesson should be omitted and even forbidden by law, on account of the time wasted by it (Prop. 30). Cornman does not go so far as Lay in his attack upon the spelling drill, as we see by the following paragraph:

"To remain strictly within the evidence gathered by this investigation, it must be admitted that there may be teachers of surpassing ability who can obtain

more than the average results by the method of the specific spelling drill, and other teachers of meaner ability who need the drill to bring their pupils up to the level of this average result."

Rice's conclusion with reference to the uselessness of the spelling lesson is modified by the fact that he has, since his investigation, written a series of spelling books for the elementary school.

(*a*) *Incidental Spelling* The Committee of Ten says bluntly that "spelling should be learned incidentally, in connection with every subject studied, and not from a spelling book." The Committee of Fifteen recommends "that selected lists of words difficult to spell be made from the reading lessons and mastered by frequent writing and oral spelling during the fourth, fifth, and sixth years."

The question here arises, What is meant by "incidental spelling?" According to the dictionary, *incidentally* means "without intention, casually, collaterally, beside the main design." The writer's experience of many years in the office of principal and of superintendent has convinced him that incidental teaching in the sense of "without intention, casually," is equivalent to no teaching. A class of necessity has a definite program, wherein a certain number of minutes are devoted to this, that, and the other exercise. Incidentals have no definite time

allowance, consequently the attention they receive is at best spasmodic, desultory, haphazard. Under such circumstances it is idle to expect satisfactory results. In a school of fifty classes, perhaps twenty per cent of the children would learn to spell under such a system; the rest would not. And on examination it would doubtless be found that the small number of teachers who are successful do their work systematically rather than incidentally.

Incidentally has for one of its meanings "collaterally." This is probably the sense in which the word is usually employed in connection with spelling. From this point of view incidental spelling would mean spelling in correlation with other subjects of the course of study, such as composition, reading, geography, history, and science. The principle of correlation is an important one, and is applicable to all school work. But it has its limitations. Complete correlation is liable to result in superficial and vague impressions; and this defect can only be cured by a certain amount of isolation. My opinion is that spelling should appear as spelling on the teacher's program and in the child's consciousness.

A further objection to incidental spelling is the fact that by this plan the child learns to spell only the words employed in the course of study. It makes no provision for the development of a general

vocabulary adapted to the needs of life after school days are over.

There is still further objection to the proposal to teach spelling only in connection with other subjects. Children do not successfully attend to more than one thing at a time. If they undertake to keep several subjects under observation at once, there is alternation of attention, accompanied by more or less confusion of impression, and consequent weakness of memory and lack of vital reaction. It is asserted that children spell just as well in schools where no separate spelling drills are conducted as in schools where such drills are had. Spelling lessons are therefore declared to be a waste of time and a mortal pedagogical sin. On this point I quote a very competent psychologist:[1]

"The wide application of the doctrine of 'incidental learning' is a case in point. [He is speaking of the difference between habit formation and judgment.] This doctrine assumed that 'content' and 'form' could be acquired simultaneously; or, to put it in another way, that form could be acquired incidentally while attention is fixed upon 'thought' or 'content.' This assumption is a direct violation of the law of habit; the child can never become proficient in form without many distinct acts of

[1] Bagley: "The Educative Process," p. 123. Macmillan, 1905.

attention dealing with form alone. It may be that the child will learn to spell without spelling lessons as such; that he will 'absorb' the form of written and printed words while he is reading interesting stories or writing essays and compositions. But if this is ever true, it is because attention has been divided, now being concentrated upon the form, now upon the content, and flitting from one to the other as the exigencies of the task have demanded."

(*b*) *Every Lesson a Spelling Lesson* It is undoubtedly true that the specific spelling lesson in school is but a trifling proportion of the total stimulation offered by the environmental influences of school, home, and outdoor life. Every lesson is contributory in some degree to spelling, even if no mention be made of the subject. Every written or printed word which is seen in street advertisements or home reading registers its effect upon the mind of the pupil (Prop. 28). Moreover, even where a daily spelling lesson as such is conducted, some attention should be paid to orthography in all branches. It is not amiss to ask pupils to spell the new words with which they meet in arithmetic, geography, grammar, history, science, and reading. In some schools where the departmental system of teaching is employed, it has been the practice to hold each teacher responsible for the spelling of the

terms that occur in the subject taught by him. Thus every teacher becomes a spelling teacher, and the pupil is not allowed to grow careless in his spelling in any part of his school work.

(*c*) *The Dictionary Habit* One essential element in the spelling equipment to which the pupil is entitled when he graduates from an elementary school is the *dictionary habit*, *i.e.*, the habit of going to the dictionary when he is in doubt as to any feature of word study, be it spelling, punctuation, syllabication, derivation, or what not. In order to develop such a habit, systematic drills are necessary. From the beginning of the sixth year, every pupil should possess a dictionary; which should be on his desk each school day. In order that the dictionary may be of use as a standard of pronunciation, the pupil must be thoroughly familiar with the meaning of diacritical marks. I have frequently had children copy the pronunciation upon the board, with the marks employed in the dictionary, and even then they were unable to pronounce the word.

The important point to be emphasized in this connection is the demand that a *habit* of relying upon the dictionary to resolve doubts shall be formed. Many devices that serve to stimulate interest in dictionary work may be employed. Exercises of this sort must never be allowed to become mechanical

grinds. It would be, for instance, a crime for a teacher to assign so many words as a home-lesson, the children being required to copy the definitions out of a dictionary into a note-book. Occasionally word-hunting may take the form of a game. A word is given, and the object is to see who can find it in the dictionary first. Or a word may be mispronounced, as *arctic*, for instance, and the teacher says, "Get your dictionaries; when you are prepared to give me the correct pronunciation, stand." Then, again, the game may be to find out how many words can be looked up in a given time, or how long it will take to look up a given number of words.

By the time the pupil gets into the highest elementary grades and into the high school he should have the habit of requiring every strange word to give an account of itself before he passes it.

(8) SPELLING AND SUPERVISION Results in spelling are determined not so much by the methods employed as by the ability of those who use them; that is, results in spelling as well as in other subjects, depend largely upon effectiveness of administration (Prop. 19.) Every supervisor of school work knows that the quality of the product in any study depends more upon the skill of the teacher than the time given to the subject. One finds schools where the usual amount of time is allotted to reading, yet the children

cannot read. Unless the subject be intelligently supervised the results will be poor, in spite of the daily reading lesson. The same is true of spelling. A thoroughly competent teacher will accomplish more in ten minutes than a novice can do in an hour.

Then again, good spelling is largely a matter of standard. Probably the majority of teachers have daily lessons in spelling without ever thinking to inquire what degree of success they achieve. They assign a stated number of new words each day to be studied at home by the children. The next day they dictate these words and correct the papers, taking note of the errors of individual pupils, but not stopping to calculate the percentage of correct results for the entire class. They imagine they are doing good work when, as a matter of fact, the results are ridiculously poor. I have known many teachers who, when told that thirty or forty per cent of the words dictated to the class, were misspelled, thought the results were quite satisfactory. The first requisite of good spelling in a school is the establishment of a high standard by the principal, and a persistent endeavor on the part of every teacher to live up to the standard. The average result of the daily spelling drill in any class should be regarded as unsatisfactory if it is less than from ninety to ninety-five per cent.

The following testimony of Superintendent C. N.

Kendall[1] as to the manner in which he improved the spelling in New Haven, illustrates the relation of supervision to spelling-efficiency.

(*a*) "Increased interest and attention on the part of the teachers to the subject; there has been more variety in the instruction than formerly.

(*b*) The teaching of common words only, and not of the uncommon ones which the child would never have occasion to write outside of school.

(*c*) The use of a spelling blank-book, in which a daily record of the pupil's work for the year is kept, thus affording opportunity for intelligent review of the words the pupil needs to review."

When Mr. Cornman abolished the regular spelling drill in the school for three years, the subject was by no means neglected. If the truth were known, it might even transpire that he and his teachers did more to stimulate interest in spelling while they taught it informally than they had done before. During these three years of experiment the subject must ever have been present in Mr. Cornman's thoughts. He may have been anxious to prove Dr. Rice's contention, which had recently been published in the *Forum*, that results in spelling have nothing to do with the amount and kind of drilling that is devoted to the subject. While, therefore, the Northwest

[1] *Educational Review*, Vol. XIV, p. 409.

School had no spelling-period on the program, spelling was probably more systematically and intelligently taught and supervised than it ever had been before.

3 The Time Allowance

Rice and Cornman conclude that the amount of time devoted to the specific spelling drill bears no discoverable relation to the result. In the nineteen cities whose spelling was tested by Rice, the time varied from six to fifty minutes a day. The results were no better where fifty minutes were employed, than where only six were used. He thinks any school that devotes more than fifteen minutes a day to spelling is wasting time. If this be so, what shall we say of the conditions described in the following paragraph, written in 1877?

"It has been calculated that on an average an hour a day, for ten years, between six and sixteen, is spent upon this accomplishment. Of what use can spelling be to one who cannot use the words which he has learned to spell? If the first elements of spelling have been properly taught, a student's spelling will keep pace with his reading; he can probably spell all the words he can use intelligently, and what need has he of more?"[1]

[1] President M. A. Newell, N. E. A., Louisville, Ky., 1877, p. 10.

The Committee of Fifteen recommends four periods a week for spelling during the fourth, fifth, and sixth years, aggregating eighty minutes in the fourth year, and one hundred minutes in the fifth and sixth years. In a recent investigation of spelling in my own district, I discovered that the average time in minutes devoted to word study by my twenty-five schools is as follows:

Subject	*Year*							*Average*
	1–2	3	4	5	6	7	8	
Spelling	100	90	70	60	50	40	40	= 60
Meaning and Use			25	25	25	25	30	= 25
Derivation				20	20	20	20	= 20
Total	100	90	95	105	95	85	90	= 105

These averages fall within the limits set by Rice and the Committee of Fifteen so far as the length of the daily period is concerned. But the total school time devoted to spelling is far greater in the New York schools than in the Fifteen's program. We begin to spell in the second year and continue for seven years. The Committee of Fifteen begins in the fourth year and ends in the sixth. My own opinion is that spelling should not only continue through the seventh and eighth years, where the pupil meets with so many new words which he must learn to use, but that even in the high school the need for some sort of spelling exercises still exists.

VI

The Meaning and Use of Words

Words are the soul's ambassadors, who go
Abroad upon her errands to and fro;
They are the sole expounders of the mind,
And correspondence keep 'twixt all mankind.

—*James Howell*

I The Function of Words

Someone has defined reading as the conversion of sights into sounds. This statement is very wide of the whole truth. So long as a word calls up a sound as its only response it is an end in itself, and does not serve its highest purpose as a link in the chain of indirect reactions. "Words are of value only when they arouse something more than articulations; they must arouse ulitmately reactions appropriate to their remoter meanings."[1] The immediate function of words is to carry some idea or emotion. In this sense they are ambassadors of the mind, that go "abroad upon her errands to and fro." They bring to us of the present, not merely the thoughts

[1] Judd: "Genetic Psychology for Teachers," p. 262. Appleton, New York, 1903.

of our contemporaries, but messages of days long past, so that what Moses has done and Socrates has thought we may know through these expounders of the mind. The culture function of education is to bring the child into full possession of language in order that he may get wisdom from the experiences of others. The word is the key to this wisdom. "Perhaps," says Lowell[1], "it will be found that the telephone, of which we are so proud, cannot carry human speech so far as Homer and Plato have contrived to carry it with their simpler appliances."

The ultimate function of the word is to beget some appropriate reaction. The final destination of every thought and emotion carried by words is expression through one or another of the several modes at our command. "No truth, however abstract, is ever perceived, that will not probably at some time influence our earthly action. You must remember that, when I talk of action here, I mean action in the widest sense. I mean speech, I mean writing, I mean yeses and noes, and tendencies 'from' things, and tendencies 'toward' things, and emotional determinations; and I mean them in the future as well as in the immediate present. As I talk here, and you listen, it might seem as if no action followed. You

[1] Essay on Gray.

might call it a purely theoretic process, with no practical result. But it *must* have a practical result. It cannot take place at all and leave your conduct unaffected. If not to-day, then on some far future day, you will answer some question differently by reason of what you are thinking now. Some of you will be led by my words into new veins of inquiry, into reading special books. These will develop your opinion, whether for or against. That opinion will in turn be expressed, will receive criticism from others in your environment, and will affect your standing in their eyes. We cannot escape our destiny."[1]

Sometimes the intermediate phase of thought, emotion, judgment, or reflection is almost entirely eliminated, and the word becomes the direct cue to an action. Huxley has a story which well illustrates this point. A practical joker, seeing a discharged veteran carrying home his dinner, suddenly called out, "Attention!" whereupon the man instantly brought his hands down, and lost his mutton and potatoes in the gutter. The drill had been thorough and its effect had become embodied in the man's nervous structure.[2]

[1] William James: "Talks to Teachers," p. 26. Holt & Co., New York, 1899.

[2] "Elementary Lessons in Physiology," Lesson XII.

2 The Nature of Definition

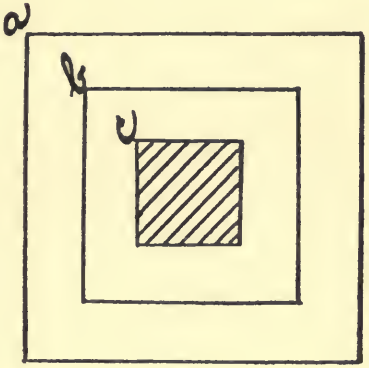
A very competent authority gives the following exposition of the process of finding the content of words:[1]

"The natural way of discovering the meaning of a word in our language is the method of induction. We hear a word, *e.g.*, *oppression*, repeated, in a certain context, in such a way as to give us, as we think, some approximate notion of its meaning, say, *violence;* then we hear it again in a different context, and perceive that it cannot mean exactly *violence;* it seems to mean *injustice;* but again some further mention of the word makes it evident that though *oppression* is always *unjust*, yet it is not identical with *injustice.* If we live in a society where the word is often and correctly used, or if we read the works of accurate authors, we shall in course of time arrive at its exact meaning. This process of rejection may be technically called *elimination.* The process by which, by introducing the different instances in which a word occurs, we arrive at the meaning which the word has in every instance, is called 'The Method of Induction.'"

It is evident from the above analysis that definitions which are inductively inferred from the use

[1] "English Lessons for English People," Edwin A. Abbott and J. R. Seeley, London, 1883.

of terms are at first inaccurate. The error consists in making the connotation too large. The correction consists in limiting the meaning. Now, the Latin *definere* means to limit or fix the boundary. The mental process of definition, therefore, is the progressive elimination of qualities that do not belong to a concept.



(1) *Illustration* [1] A young child plays with a *sheep dog*. He hears others call this thing a dog. A dog then for him has the following attributes:

(*a*) Runs about.
(*b*) Has four legs.
(*c*) Barks.
(*d*) Is larger than himself.
(*e*) *Has a brownish coat.*

[1] Modified from Dexter and Garlick's "Psychology in the Schoolroom." Longmans, 1898.

The term at this stage is represented by the square "*a*" in the diagram. He next sees a *retriever*, while the sheep-dog is present. He hears the retriever called "dog" and notes that it

(*a*) Runs about.
(*b*) Has four legs.
(*c*) Barks.
(*d*) Is larger than himself.
(*e*) *Has a black coat.*

There is a temporary confusion, and the result that item (*e*) is eliminated, and the square "*b*" represents "dog" at the second stage of development.

The child now sees a *spaniel*, hears it called "dog," and notes that it

(*a*) Runs about.
(*b*) Has four legs.
(*c*) Barks.
(*d*) *Is smaller than himself.*

There is confusion again, with a resulting elimination of item (*d*), and the square "*c*" represents "dog" at the third stage.

3 Relation of Language-Teaching to Knowledge-Teaching

What do we imply when we speak of teaching the meaning of words? Alexander Bain answers this question in the following passage:

"Knowledge of things should always keep ahead of the knowledge of terms.[1] The more we inquire into the early teaching of language the more shall we find it to be in great part the teaching of knowledge under difficulties. The child is soon brought into the situation of having to comprehend consecutive speech, many parts of which are devoid of meaning. But to explain the words that are blank to the mind, we have first to bring before the view things that have hitherto been entirely unknown. We have to communicate a knowledge lesson, supplemented by a verbal lesson, the first being by far the more serious of the two. If the teacher can but compass the knowledge difficulties, he does not need any extraordinary efforts or any refined methods for securing the adherence of the verbal expression." . . . "The best form of introducing a fact would be its real occurrence . . . but listening to talk and book-reading bring forward many things without any reference to their actual presentation; and then some way of introducing them has to be found; the task being in many instances premature and impossible."

"It has already been noted that the explanation of newly-occurring terms is for the most part thing-knowledge. When the word 'slave' is presented for the first time, an explanation of the state of slavery is provided, whereby a new idea is imparted to the pupil. This is in no sense a word lesson, although the recurrence of a word is the occasion for teaching the thing. If the pupil has had prior experience of things without knowing their names, to give the name is a language lesson: this situation is not so frequent as the other."

[1] From "Education as a Science."

4 How Words Get Meaning

A number of important investigations have been made in an effort to discover what kind of content children have for the words they use.

Below will be found a brief account of the principal studies that have been published on this phase of word study.

(1) THE BERLIN INVESTIGATION[1] In October, 1869, The Berlin Pedagogical *Verein* issued a circular inviting teachers to investigate the individuality of children entering city schools so far as such individuality was represented by ideas of common objects. The children were questioned on seventy-five different objects selected from their environment. Following are a few specimens of the words employed and the number of children in 10,000 that had content for the term used: dwelling, 9026; rainbow, 7770; cube, 6957; moon, 6215; frog, 5085; triangle, 4182; City Hall, 3615; squirrel, 3579; village, 3374; museum, 3222; mushroom, 2855; plough, 2036; dew, 2364; lake, 2078; willow, 1667; sleet, 2493; hare, 2466; birch, 1318; river, 1122; botanical garden, 527.

No very definite conclusions bearing upon our problem are drawn from this study, except the following:

[1] *Vorstellingskreis der Berlin Kinder beim Eintritt in die Schule*, pp. 59–77. *Berlin Städtisches Jahrbuch*, 1870.

(*a*) The content of children's vocabularies is influenced to a very large extent by their environments out of school. Thus, only 18 per cent of the children in the schools of a German city had seen the sun rise, while 42 per cent of children in the country districts had seen the same.

(*b*) Kindergarten children have a better content for words than those that come directly from home to the grades. Thus, out of 10,000 German kindergarten children, 7032 knew a swan, while of 10,000 children from families only 5976 knew the bird.

(*c*) In a large majority of the seventy-five words employed in the German test, they boys had clearer concepts than the girls.

(2) DR. HALL'S "CONTENTS OF CHILDREN'S MINDS"[1] In 1880, Dr. G. Stanley Hall repeated the German experiment in Boston, substituting for such words as were unsuitable in the foreign list others that were adapted to the local conditions. The problem Dr. Hall set for himself was this: "What may Boston children be assumed, by teachers, to know and have seen when they enter school?"

With this general problem and its answer we are not now concerned; but as the test applied was in effect finding what content children had for certain terms, the study throws incidentally some light on

[1] G. Stanley Hall. E. L. Kellogg Co., New York, 1893.

the study of words. Among the conclusions formulated by Dr. Hall are the following:

(*a*) The German boys had more content for seventy-five per cent of the Berlin words than the girls had. In Boston the boys excelled the girls in about 70 per cent of the words used.

(*b*) The German conclusion that kindergarten children possess a richer content of words than other children do is emphatically confirmed by the Boston study.

(*c*) The Boston inquiry also confirms the conclusion of the German investigation that country children have more content for words than city children have. For 86 per cent of Dr. Hall's questions, the intelligence of the country children ranked higher than that of city children. "A few days in the country at this age (six years) has raised the level of many a city child's intelligence more than a term or two of school-training could do without it."

(*d*) Many errors in the use of words by children are due to *euphonic analogy*. Numerous illustrations are given from the Boston study; as: "Butterflies make butter;" "grass-hoppers give grass;" "honey is from honeysuckles;" "when the cow lows it blows its own horn;" "a holiday is a day to 'holler' on," etc. "Words in connection with rhyme, rhythm, alliteration, cadence, or even without these,

simply as sound pictures, often absorb the attention of children, and yield them a really esthetic pleasure, either quite independently of their meaning, or to the utter bewilderment of it."

(3) EARL BARNES In Denmark Dr. Hall's study was repeated by Mr. Olsen, who found results identical with those of the Boston schools.[1] These investigations show us how large a part of a child's vocabulary is obtained by imitation without experience with the things which the words signify. When we hear children's language we are prone to imagine that the words they use have the same content that we put into them. Nothing could be further from the facts than such a view.

Ideas in the mind of a child are quite fragmentary and incomplete, or entirely erroneous. In using language children project their ideas, as it were, on a screen; and hence a study of children's vocabularies show us how terms grow in their minds.

In 1902 Earl Barnes published a paper on "How Words get Content."[2] The test which is the basis of the study was given to 1200 London Board School children, 1500 Boston school children, and certain children in English secondary schools. The children

[1] "Children's Ideas," in the *Paidologist*, England, Vol. II, pp. 128–131.

[2] "Studies in Education," Vol. II., p. 43.

were asked to give the meaning of the following six words: *monk, peasant, emperor, armor, nation, school.* The first five were selected to represent the historical group of the humanities, and are fairly representative of the vocabularies constantly appearing in all kinds of school work after a child is eight.

The returns are tabulated separately for each word. Here are the results of the test for *school:*

(*a*) "SCHOOL" (Partly or wholly correct — Boston.)

Age	8 yrs.	9 yrs.	10 yrs.	11 yrs.	12 yrs.	13 yrs.
	88%	93%	95%	99%	97%	98%

School was chosen because its meaning was known to every pupil tested. No child had the answer entirely wrong. Some omitted it, probably for want of time, as the word was last in the list. The table shows that when a child has an adequate content for a word he manages to express himself properly. It is therefore assumed that the inaccuracies for the remaining words are due to lack of content and not merely to difficulties of expression.

Following are the results for *armor* and *emperor:*

(*b*) "ARMOR" (No Answer — Boston.) *Per cents.*

Age	7 yrs.	8 yrs.	9 yrs.	10 yrs.	11 yrs.	12 yrs.	13 yrs.	14 yrs.
Boys	—	34	21	18	11	12	14	11
Girls	40	31	38	27	34	16	23	21

(*c*) "ARMOR" (Wrong answer — Boston.)

Boys	—	34	15	12	6	4	2	2
Girls	28	18	18	17	5	7	2	2

(*d*) "ARMOR" (Wholly or in part right content — Boston.)

Boys	—	32	64	70	83	84	84	87
Girls	32	51	44	56	61	77	75	77

(*e*) "ARMOR" (Content entirely correct — Boston.)

Boys	—	10	28	32	45	56	53	72
Girls	—	4	11	13	21	46	44	49

We next compare the results between the London and Boston children.

(*f*) "ARMOR" (Content entirely correct.)

America	—	7	20	23	33	51	48	60
London	—	16	26	48	61	64	68	—

The study of the word emperor is based on 1400 returns from children in the London Board Schools.

(*g*) "EMPEROR" (No Answer — London.)

Boys	—	41	25	17	9	11	11	9
Girls	—	29	35	22	14	12	15	14

(*h*) "EMPEROR" (Content entirely wrong — London.)

Boys	—	25	13	10	7	3	1	2
Girls	—	29	12	17	6	5	4	1

(*i*) "EMPEROR" (Content partly right — London.)

Boys	—	17	30	23	10	3	3	2
Girls	—	28	26	17	18	13	14	8

(j) "EMPEROR" (Content entirely correct — London.)

Age	8 yrs.	9 yrs.	10 yrs.	11 yrs.	12 yrs.	13 yrs.	14 yrs.
Boys	3	21	34	58	60	62	74
Girls	3	11	22	42	48	50	65

(*k*) "PEASANT" (Correct content — London.)

Age	8 yrs.	9 yrs.	10 yrs.	11 yrs.	12 yrs.	13 yrs.
Board School	6	2	8	20	20	20
Secondary School	26	31	41	21	35	43

From these tables and the papers upon which they are based Mr. Barnes draws the following inferences;

(*a*) Dr. Hall's discovery that euphonic analogy is a prolific source of error in children's use of words is confirmed, *e.g.*, "Armor is to hold a thing by your arm;" "armor is a title given to Arabic rulers (Ameer);" "armor is a river (Amoor);" "armor is a man's name (Armour)." Mr. Barnes says examiners should treat this kind of errors as unripened truth, although it is difficult to distinguish them from mere guesses.

(*b*) From tables (*b*) and (*g*) we learn that at eight 34 boys in 100 and 31 girls in 100 had no available content for armor, while 41 boys and 29 girls had no content for emperor. This ignorance vanishes with a fair degree of steadiness, but even at fourteen there are still from 9 to 21 per cent of children without content for these words.

(*c*) The effect of home is well illustrated by table (*k*). The Board School children come from homes of laborers, artisans, and small shop keepers. The secondary school children represent the middle-class homes. The intelligence of the better-class children is from two to fifteen times as great as that of children from the homes of the humbler class.

(*d*) "Learning definitions, or dictionary work, can never give any slightest new content to the mind; it can simply re-shuffle the existing ideas. Every child should know how to use a dictionary, but the

teacher should not allow herself to think that it can furnish new material for thought. It can simply take content out of old terms and put it into new ones; and generally the product is less clear than before the transfer."

(*e*) "All teachers of subjects in the humanistic group, and this includes all elementary subjects except science, should each year select from fifty to two hundred new terms connected with the subject matter of that year, and plan definitely that their children should know these terms before they leave the grade."

(*f*) Illustrative material should be selected with the same pains and care that a teacher employs in preparation for a lesson in nature study or an experiment in elementary science.

(*g*) These materials should consist of carefully selected *pictures*, *stories*, and *incidents*. They should be treated as similar material is treated in a science lesson. They should be *observed*, *analyzed*, *compared*, and combined with experience already possessed by the children. "A few terms carefully worked out and added to each year would strengthen all the rest of the vocabulary not thus carefully elaborated, and would give a foundation for good dictionary work."

(*h*) The method suggested for the elementary

school would apply equally to the high school and to the university.

(4) WILL GRANT CHAMBERS[1] In 1904, Mr. Chambers published the results of a study which he made to verify the inferences of Mr. Barnes. He employed the same method and the same words that had been used in England; namely, *monk*, *peasant*, *emperor*, *armor*, *nation*, *school*. As in the case of Mr. Barnes, *school* was used to discover to what extent children at different ages can express the meaning of a word with which they are perfectly familiar. The remaining words were used because the child is probably ignorant of their meaning when he enters school, but is expected to know them when he arrives at the high school age. The results in figures and the inferences of this study are practically identical with the findings of Mr. Barnes.

5 Summary of Conclusions

(1) The content of children's vocabularies is influenced to a very large extent by their environments out of school. (See especially table *k* of Barnes's test.)

(2) Kindergarten children have a better content for words than those that have never been in a kindergarten. Such is the experience of Boston and Berlin.

(3) Boys seem to have clearer concepts as to the

[1] "How Words Get Meaning," *Pedagogical Seminary*, Vol. XI., p. 48.

meaning of words than girls have. This is true of the Boston and of the Berlin children.

(4) German and American investigators agree in the conclusion that country children have more content for words than city children have.

(5) Many errors in the use of words by children are due to euphonic analogy (stature — statue).

(6) At eight, about thirty per cent of the English children tested had no available content for "armor"; forty per cent of the boys and thirty per cent of the girls had no content for "emperor."

(7) Learning definitions can never give any slightest new content to the mind; it can simply reshuffle the existing ideas.

(8) All teachers of subjects in the humanistic group should each year select from fifty to two hundred new terms connected with the subject matter of that year, and plan definitely that their children should know these terms before they leave the grade.

(9) Illustrative material should be collected with the same pains and care that a teacher employs in preparation for a lesson in nature study or an experiment in elementary science.

(10) These materials should consist of carefully selected *pictures*, *stories*, and *incidents*. They should be treated as similar material is treated in a science

lesson. They should be *observed*, *analyzed*, and *compared*, and combined with experience already possessed by the children.

(11) When a child, at any age, has an adequate content for a word he manages to express himself properly (correct content for "school," 88 per cent at 8, 98 per cent at 13).

6 Words Not to be Defined

It may be well to specify just the classes of words whose meanings should not be taught in the elementary school.

(1) Too Difficult Many words occur in the books used in school whose meaning is too abstract or refined for the child at the time. It is unwise to select such terms for instruction because they can be more successfully taught and learned at a more mature stage of advancement. We must recall in this connection the fact already explained, that learning the meaning of words is really a knowledge-lesson; and there are many kinds of knowledge that a pupil in the grades cannot possibly comprehend. Among the terms here alluded to are very technical or unusual words, and words of ethical or moral significance beyond the experience of children.

The following are examples: *plasmodium*, *par-*

thenogenesis, *psychology*, *anthropology*, *autocracy*, *profligacy*, *sensuality*, *sanctification*, *free-thinker*, *transubstantiation*. Our time is limited, and we should devote ourselves to the task of equipping the pupil with a vocabulary of words in ordinary use, and should not anticipate the work of the secondary school and college.

(2) Too Easy Another class of words that should be excluded from the meaning list consists of words in common use whose meaning is familiar to all children. The following are examples: *knuckle*, *laughter*, *Wednesday*, *mirror*, *music*, *neighbor*, *nineteen*, *nurse*, *sponge*, *though*. The object of definition is to bring the "meaning" of words to the mind; that is, to develop or suggest the object or idea for which the word stands. If this knowledge, or content, or meaning is already well-known, why waste time in carrying coal to Newcastle?

It is evident, from the preceding illustrations, that the exclusion of words from the meaning list is quite as important as the selection of the proper words. Not all the words used by a child or employed in his books are to be defined or explained. How barbarous, then, was the practice, once very common, of requiring children to commit all the definitions found in the dictionary! One writer confesses that he took a class through Worcester's dictionary regu-

larly from beginning to end,[1] although another author, twenty years before, had condemned the practice in the following sensible paragraph:[2]

"To say that it would be impossible to remember the definitions thus abstractly learned would be to assert what must be perfectly obvious to every one. And even if they could be remembered, they would be of little utility, for as the right application of a definition must depend entirely on the situation of the word to be explained and the office it performs in a sentence, the repeating of half a score of meanings, as obscure perhaps as the word itself, conveys no definite thought, and serves rather to darken than to illumine the mind."

7 What Words to Define

The meaning and use list should contain at least the following two classes:

(1) WORDS IN COMMON USE WHOSE MEANING IS NOT FAMILIAR TO THE CHILDREN The selection of this list depends entirely upon circumstances. We have seen that the home environment affects the vocabularies of children. Only two per cent of the nine-year-old pupils in the Board Schools of

[1] Christopher A. Green: "Methods of Teaching Spelling," *Journal of the American Institute of Instruction*, 1851, p. 181.

[2] G. P. Thayer: "On the Spelling of Words," *Journal of American Institute of Instruction*, 1830, p. 123.

London knew the meaning of "peasant," while thirty-one per cent of the children of the same age in a private school knew the word. We have shown also that kindergarten children have a better content for words than others of the same age; that country children are superior to city children; and that boys have slightly the advantage of girls.

(2) WORDS NEEDED TO MASTER THE COURSE OF STUDY In the second place, we must teach the meaning of words that are needed to master the subject-matter of the grade. A large proportion of the words that occur in school books have the vaguest kind of content for the child or no content at all. The following simple experiment illustrates this fact: A seventh-year class had read Longfellow's "The Courtship of Miles Standish," and were asked to tell the meaning of a few words selected from the text of the first two pages. This was the result:

Words	*Per Cent of Children who Knew the Meaning*
clad	12
doublet	0
anon	0
stature	50 (confused with statue)
athletic	25
sinews	0
azure	6
scribe	1

Perhaps the best way to find out what words need

to be taught in a given class is to test the children. Mr. Barnes has shown that if a pupil has content for a word, he manages to express himself with sufficient clearness. We may, therefore, assume that if he cannot tell the meaning of a word he has no meaning to tell. Every grade, even every class, will almost necessarily have its peculiar list, and will scarcely have the same list during any two successive terms. Teachers in the same grade often have different text-books; and therefore, a list selected by one teacher might be partially useless to another. These lists cannot well be made in advance. As the reading, or study, or experiment proceeds, the words come up. If the meaning is known, there is no occasion for wasting time on it. If the word is new and its meaning within the comprehension of the pupil, it is put into the meaning and use list.

VII

Methods of Teaching the Meaning and Use of Words

We have now reached the most difficult part of our problem. How shall the schoolmaster put content into the words of his pupil? This has been the problem of the ages. Words are the "ambassadors" and "sole expounders" of the mind, hence all knowledge must be communicated from the master's mind, as well as from books, to the pupil's mind by means of words. Words are competent to fulfil their function only when they represent the same things to the two communicating minds. As a matter of fact, they never do this; but in the case of adults, they do it with sufficient approximation to render the exchange of ideas possible. The immaturity and want of experience on the part of the child, however, serve sometimes to make words non-conductors of thought. In order to secure the best results in the most economical way, the knowledge of things and the knowledge of terms should progress together. As a child

in his early years comes in contact with all sorts of people whose conversation he hears, and later reads all sorts of books, magazines, and papers, it is impossible to keep the knowledge and vocabulary abreast of each other. The vocabulary usually outruns the knowledge, being picked up and employed loosely by imitation. Sometimes the opposite condition obtains, the child having ideas and feelings without the necessary language for adequate expression. He is deficient in words representing subjective states, because he is too young for the introspective processes involved in the use of subjective terms. He is prone to use the general rather than the specific word in his descriptions and narrations. For instance, if he has been at a picnic, he says he has had "nice things to eat." When he gets older he will probably say he has had "thin, dainty, chicken sandwiches, olives, grapes, and little cakes with pink icing on them." When we try to bring the vocabulary up to the knowledge, the process is purely a language lesson; when we try to bring the knowledge up to the vocabulary, the process is a knowledge-lesson. In both cases it is called word study; but in the one instance it is finding the meaning of words, while in the other it is learning the use of words.

I Inductive

There are two principal methods of teaching the meaning of words, the inductive and the deductive. The inductive method has already been described in one of its aspects in the previous chapter. We shall next try to discriminate the several forms of the inductive method.

(1) THE NATURAL METHOD This is the spontaneous procedure the child follows in learning to speak. Its application in the class-room would require the frequent use of a word in the presence of the pupil, so that almost unconsciously he would infer the correct use. Now, how can this be accomplished? The following description of a device is offered as an answer to the question:[1]

"In a day's exercises the teacher will select three or four words which are to be subjects of instruction. Of course, every unfamiliar word has been explained, but these are put aside for future treatment. The limitations of the classroom allow only an artificial application of the natural method. I have endeavored to approximate it by printing such words on charts and exposing them in a conspicuous place in the class-room without comment, so that there are always about eight words before the eyes of the pupil.

[1] Albert Shiels, District Superintendent of Schools, New York, is the author of this device.

Furthermore, the teacher will use these words in his conversation when possible, and it does not require a master of language to introduce ordinary words into the class-room conversation. Imitation will contribute its share; and teachers who have tried this method state that their pupils will introduce the words into compositions through the suggestion of the chart and the teacher.

Not until one week later, will the word be considered as a formal subject of instruction, and by that time it is something more than a bare unknown term. It is "warm" to the pupil. The sense in which the word will be selected will be the same as that in which it first occurred, and it is, of course, assumed that when it was first chosen it was used in one of its general meanings. The definition is now taken up, and it must be developed, not merely taken like a dead mummy from a dictionary. How far figurative meanings may be drawn out must be determined by the grade."

A child's knowledge of a term is, of course, never complete, and not very exact. The younger he is, the smaller the degree of accuracy and completeness we can expect. It is necessary for the teacher to provide for grades of exactness; so that he may not demand of a fourth grade pupil the same degree of perfection that he demands of an eighth grade pupil.

The question as to when formal or systematic work in the meaning and use of words should begin is pertinent at this point. The child is occupied during the first three years of school in an effort to overcome the mechanical difficulties of reading, and a large proportion of the words employed in his reading lessons are selected from his oral vocabulary. During this period he is not able to read books on his own account for the purpose of acquiring knowledge. He therefore meets with relatively few words that are strange to him. He has been engaged in recognizing words previously familiar as ear-symbols in their new disguise as eye-symbols. During the fourth year independent book-study begins; and a host of strange terms are encountered, which must be known if the subject-matter of the book is to be understood. All these considerations point to the fourth year as the proper time for the beginning of the study of the meaning of words.

(2) THE USE OF CONTEXT The stories in the school-readers usually deal with facts familiar to children, which are expressed in language choice and frequently adorned. In reading such material the pupil's language stores are insensibly increased. By asking questions on the text and encouraging children to answer in the language of the book, the teacher may train his class in the habit of the correct

use of words. The meaning of many new words can be inferred from the context. The pupil in this case is really employing the natural method explained under the preceding topic. The difference is that in the former instance he inferred the meaning of words by *hearing* them used, whereas now he learns by *seeing* them used.

(3) MEMORIZING Another inductive method of learning the meaning of words consists in committing passages to memory. Poetry is especially recommended for this purpose by Alexander Bain.[1] Poetry contains thoughts, images, and expressions such as are capable of taking part in our future intellectual constructions. Impassioned and rhythmical prose is next in value to poetry for memorizing purposes. Selections should be chosen which are expressed in short, happy phrase, rather than in long and complicated sentences. A mind well stored with language thus carefully chosen will unconsciously catch some of the tricks of style and learn to discriminate nice shades of meaning. A little girl once crossed Newark Bay with me on a windy autumn day. The water was rough and as the child caught sight of the water's edge, she exclaimed, "The waves dashed high on a wild New England shore." In this way the memorized stores through association become avail-

[1] "Education as a Science."

able for future demands in oral and written composition.

(4) THE METHOD OF STORY AND PICTURE Earl Barnes came to the conclusion from his inquiry on "How Words Get Content," that teachers should select for special study from fifty to two hundred terms each year; that they should collect illustrative material with the same care a teacher employs in an experiment in elementary science; that these materials should consist of pictures, stories, and incidents; that these should be treated as similar material is treated in science, *i. e.*, they should be observed, analyzed, compared; and that finally the pupil should infer the proper use of words as a result of such study. I think we may call this the story method. Mr. Chambers[1] warns us against one danger in this form of teaching. We must be careful not to let the meaning of a word depend upon a single incident, but should vary its use sufficiently to bring out its essential content by several common applications. For instance, a child on being asked for the meaning of "peasant," wrote: "A peasant is a farmer in Holland." Another child wrote for a definition of "emperor," "An emperor is the ruler of Germany." A third wrote for "monk," "A monk is a man who hunts people who are lost." I

[1] "How Words Get Meaning," *Pedagogical Seminary*, Vol. XI., p. 48.

offer below three stories or incidents to illustrate the method of teaching here described:

Scalawag — During the period of reconstruction after our Civil War, the colored people of the South were enfranchised, while most of the men of influence and ability were disfranchised on account of having taken part in the rebellion. This left the affairs of government in the hands of three classes — the enfranchised slaves, the "carpet-baggers," and the "scalawags." These last were Southern white Republicans. The name applied to them originated in the experience of a man who was kicked by a sheep so that he died. "He said he didn't mind being kicked, but he hated the idea of being kicked to death by the meanest wether in the whole flock, the scaly sheep." Therefore "scaly wag," or scalawag, was applied to a man who was supposed to be meaner than a carpet-bagger.[1] The word now means a scamp or worthless fellow.

Carpet-baggers The so-called carpet-baggers were Northern men who went to the South during the period of Reconstruction. Many of them had been Union soldiers. They were attracted by the high price of cotton, and became planters. As their ventures were generally unsuccessful, they took ad-

[1] "History of the United States," by Jas. P. Rhodes. Macmillan, 1906, Vol. VI., p. 91.

vantage of the new conditions to earn a livelihood in politics, which was open to them on account of the wholesale disfranchisement of Southern white men. Their worldly goods, it was supposed, could all be carried in a carpet-bag; hence, they became known as carpet-baggers.[1] This word is now applied sometimes to any one who seeks his fortune in new or untried fields.

The Story of the Word "Petrel" A petrel is a little black and white seabird. It has long, pointed wings that will carry it for days over the ocean. It likes to spread its wings and speed along after some ship. It is quite at home upon the water and appears to walk on the billows.

Once when the disciples of Jesus were in a ship tossed by the waves, Jesus walked toward them over the sea. Peter, one of the disciples, came down from the ship and stepped out upon the water to meet Jesus, his master.

Peter and the seabird both braved the sea, and appeared to walk upon the waves. Therefore the bird was called petrel, which means "little Peter."

(5) DRAMATIZATION In the primary grades, before the period for the formal study of meanings has arrived, dramatization has in modern days become a useful means of giving richness of content to the

[1] "History of the United States," Rhodes. Macmillan, Vol. VI., p. 91.

spoken and written symbols that are thrust upon the child in such profusion.

The story will be told or read one day, and the next some children will be allowed to "act out" the incidents as related. This device is particularly useful to pupils who come from uncultured homes, where the daily conversation furnishes no assistance in learning the use of words.

2 Deductive

When we have ascertained the meaning of a word by induction, it is sometimes of use to confirm, or narrow still further, our definition by another method — the method of deduction.

Many of our least familiar words are derived from Latin or Greek words; others from Latin through French. By taking such compound English words to pieces, and translating their foreign roots into English, we can often deduce the exact meaning of the compound word. Thus by knowing that *ge* is Greek for *earth*, and that *logy* means *science*, we may see that "geology" means science of earth. But this is not always a safe process.[1]

(1) Prefixes and Suffixes At first the pupil learns words as wholes. A little later he learns their

[1] Abbott: "English Lessons for English People," p. 22.

parts as sounds and syllables for purposes of spelling and identification. He learns the meaning of new words considered as wholes, also. Of the majority of words used by him in his early years, he infers the meaning unconsciously. During the first three years he deals chiefly with words taken from his oral vocabulary. During the fourth year he begins to read books for information or pleasure, and thus learns the necessity for exercises in finding the meaning of new words. During the fifth year we may properly begin to show him that the parts of which words are composed may give a clue to their meaning.

The first steps in this work should be analytic. Taking some familiar word like *recall*, the teacher shows that it may be separated into two parts — *re* and *call*. The children know the meaning of *call;* perhaps some know the meaning of *recall*. Other similar words are submitted, such as *rearrange*, *rebound*, *reclaim*. The children may, by this time, infer the meaning of *re*. Then it is explained that in such words the first part is called prefix and the second part stem. Suffixes are treated in the same way. It has been suggested that in these first exercises we reject all words whose stems cannot be used as words. This would exclude from our list such words as *report* and *reflect*, but would retain *re-exchange* and *reform*.[1]

[1] Emma L. Johnston, Brooklyn Training School.

After some little drill of the analytic sort, the process may be reversed, and children required to build words out of given elements. The building may take the form of a co-operative exercise on the board, teacher and class working together, or the elements previously learned may be given as a written test. The children should give the meaning of the elements used, as well as the literal and current meanings of the words they build. They should not be encouraged or allowed to add prefixes and suffixes to words merely because such additions are possible. Thus, we may build *sensible* and *senseless* from *sense*, but we do not want *sensibility* or *sensual*, because these words could not properly be defined for children.

In the fifth year I would not require pupils to copy any of this work into note-books. The teacher should, however, enter the words analyzed, as well as the stems, prefixes, and suffixes used, into her progress book for reference, review, and drill.

(*a*) *Graded Lists Essential* It was suggested above that the beginning of the etymological analysis and synthesis be somewhat informal. It is not intended that the work shall be haphazard. On the contrary, the principal should provide a graded list of elements to be taught and reviewed in each class. This is essential to economy of effort. Unless

each grade has a definite amount of work prescribed, all the teachers might be frittering away the children's time on the same dozen or score of elements. What particular work is done in a particular grade is not nearly so important as the demand that the work shall be definitely agreed upon and faithfully performed.

(*b*) *Review Work* By way of review the prefixes and suffixes may be arranged into classes according to the language from which they come, and according to their meaning, as shown in the following table:

ENGLISH PREFIXES

a = at, in, on	*out* = beyond
be = to make, by	*over* = above
en (*em*) = in, on, to make	*to* = the, this
for = not, from	*un* = not, opposite act
fore = before	*under* = beneath
mis = wrong, wrongly	*with* = against, from

The teacher should remember that the object of this work is to furnish a key to the meaning of words, and, above all, to stimulate the interest of children in the study of words. The lesson, therefore, must never descend to a lifeless, mechanical drill; for that is the surest way to destroy whatever interest a child may have in words and to render the whole performance worthless.

(2) DEFINITION A second form of the deductive

method of finding the meaning of words is the use of the definition. The dictionary gives a list of the meanings in which the word may be used. By comparing these definitions with the context, we infer that one or the other of the meanings applies in the given case. We have already found, from a study of the psychology of meanings, that definitions can never give new content to the mind. They can, however, re-shuffle the existing ideas, and often explain the strange by the familiar.

Suppose the child finds the word *occlude*, as used by the dentist. He turns to the dictionary and finds that *occlude* is defined by the synonym *to shut*. But very frequently the definition is as much of an enigma as the word it attempts to define. The following letter written by a parent of foreign birth to a New York school principal was evidently elaborated from dictionary definitions:

Dear Miss B.

Please exculpate my son Moses for being absent from school one aggregate day because his mother substantive sick and he had to sojourn in the house perpetual, so please apology him this one day absence and oblige his father.

While the dictionary, therefore, has its value, it is not suitable for the use of very young children. The beginning of the study of meanings must be by the inductive method. But in about the fifth or sixth

year, after children have had some work in word analysis and word building by means of prefixes and suffixes, they should be gradually trained to get information from the dictionary.

(*a*) *Synonyms* One of the forms of definition is the method of synonyms.

"The first decided amplification of language lessons on the great scale is the teaching of synonymous words. The best example of this is the perpetual passing to and fro between our two vocabularies — Saxon and Classical. The pupils bring with them the homely names for what they know, and the master translates these into the more dignified and accurate names; or in reading, he makes the learned terms intelligible by referring to the more familiar."[1]

In the following list of synonyms there is probably one word in each series that is familiar to most children, and by means of which the remaining words in the group are understood:

English	*Latin*	*Greek*
well-bred	civ il	po lite
strength	vig or	en er gy
tease	tor ment	tan ta lize
sight	spec ta cle	scene
shel ter	ref uge	a sy lum
fore tell	pre dict	proph e sy

[1] Bain: "Education as a Science."

bold	cou ra geous	he ro ic
dark en	ob scure	e clipse
time	e ra	pe ri od
foe	en e my	an tag o nist
stress	ac cent	em pha sis

The study of synonyms has long been regarded as a valuable intellectual discipline. It cultivates a habit of thorough investigation into the meaning of words, and this habit is indispensable to precision and accuracy of thought. Slovenly use of words implies slovenly thinking. While the drill on synonyms cannot be very thorough or formal in the elementary grades, it may be used as a mode of definition and for the purpose of inducing children to acquire the habit of making nice distinctions between words. By and by the process of critical study in the use of words will become spontaneous, and the child will unconsciously select the term with the right shade of meaning.

(*b*) *Figurative and Poetical Equivalents* A special application of the method of teaching words by synonyms is the use of figurative and poetical equivalents. In a sixth-year reading lesson, recently heard by the writer, the word *fireside* occurred. The children who knew the meaning of the word were asked to stand; thirty per cent arose. They were then asked to give a definition. Every pupil took the word in its literal sense to represent a place where

fire is kept. It is a valuable lesson in such cases to point out the figurative extension of the word. There lurks in many such applications a singular poetic beauty, which children are capable of appreciating. Another useful exercise consists in adducing equivalent idiomatic phrases for single words. Roget's *Thesaurus* is a treasure-house of such material. For instance, where we distrust a person or situation, "we smell a rat;" if we have *courage*, we "put on a bold front," or "come to the scratch;" when we *die*, we "shake off this moral coil," or "pay the debt to nature," or "go to our long home." There is a subtle reaction of the knowledge of things in this exercise because figures imply a comparison of one object with another, and they are used to intensify and elucidate the meaning.

3 Tests of Meaning

How shall the child's knowledge of the meaning of a word be tested?

(1) Definitions not to be Copied or Memorized Under no circumstances should children be required to memorize the formal words of the definitions found in the dictionary, nor should they ever be required to copy definitions into note-books from the dictation of the teacher.[1] An enormous waste of

[1] This interdiction applies only to words of ordinary use. Technical terms found in grammar, arithmetic, science, etc., must be technically defined; and such definitions should be memorized in the higher grades.

time is involved in the exercises here condemned. In the first place, it must be perfectly obvious to everyone that it would be an impossible task to remember definitions thus abstractly learned. To prove this statement, let the reader try to remember the exact words of any definition he ever found in the dictionary. And if the child cannot remember definitions, it is manifestly an outrage to compel him to copy them into a book. If he wants to refer to a definition it is easier to depend upon the dictionary, which has all the words, than to refer to his note-book, which at best can have only a few.

But even if a child could remember the words of the definition, it would not be desirable to do so. The "meaning" of a word must be stored in terms of experience or knowledge, and a definition is neither. The function of a word is to convey an idea or feeling; hence we do not desire to establish a connection between the word and its definition; for this is merely associating one symbol with another. The function of the definition, so far as it has any value, is to call up some former experience of the pupil and connect it with the new word. The word and the experience have hitherto been strangers. The definition merely serves to establish an acquaintance between the two. When the word "Ceylon" is pronounced, we do not

expect the pupil to think of the words, "Ceylon is an island south of British India"; nor do we want him to recall a yellow patch on the map of Asia. Whatever he knows of Ceylon, its people, houses, vegetation, animals, etc., should appear in consciousness when the word is seen or heard. So in teaching the meaning of any other word, the aim is to connect some real knowledge or experience directly with the word symbol.

(2) CHILDREN'S DEFINITIONS When a child makes his own definition, the process is very different from the recitation of a memorized definition. When he recites a definition someone has made for him, there may be nothing in consciousness except the words he has learned. When he undertakes to construct an original definition, he is not thinking of abstract words, but is trying to convey some experience of his which we call the content of the word. We have already seen that if there is any content in his mind, the pupil of any age manages to express himself with reasonable success. The child's own definition may therefore be taken as a test of his knowledge of a word. The peculiarities of children's definitions have been carefully investigated by Binet, Barnes, Shaw,[1] and others; and

[1] See the author's paper on "Interest" in "Educational Foundations," Vol. 18, p. 126, A. S. Barnes & Co., 1907.

from these studies the following interesting conclusions are gathered:

(*a*) At the age of seven, children define things in the terms of "use"; that is, if asked what a thing is they tell what it does or is used for; as, "A knife is to cut with."

(*b*) At the age of eleven, "use" is still supreme, but "larger term" and "substance" are assuming importance. By "larger term" is meant referring an object to its genus; as, "A clock is a time-piece." By "substance" is meant what an object is made of; as, "A clock is made of wood."

(*c*) At fifteen, "larger term" is more important than "use"; "substance" and "structure" are getting more and more prominent.

(3) CHILDREN'S SENTENCES In some quarters it is customary to test the "meaning" of words by memorized definitions and the "use" by original sentences made by children. We have already condemned the memorizing of definitions. What shall we say of the sentence-test? Good authorities may be quoted on both sides of this question. Prof. Samuel T. Dutton, of Columbia, speaks thus: "The pupils themselves should be required to put into suitable sentences the words that properly belong to their vocabulary at each stage of school life. We

are seeking for the largest possible self-activity."[1] With this view I agree. I can see no valid objection to the sentence method of testing a pupil's knowledge of content. On the contrary, it is plain that the use of words in the oral or written discourse is the aim of every lesson on the meaning of words. The child, therefore, cannot begin using his words too soon. Of course, one must not imagine that the pupil gets content by writing sentences. We assume that he has content; and the construction of sentences is merely a test of the accuracy of his content, and practice in the proper use of the word.

[1] "New York Teachers' Monographs," November, 1898.

VIII

Devices in Word Study

I "Trapping"

All the spelling in the writer's boyhood days was by the oral method. Spelling was always the last exercise on the program. There were, in our little country school, at least two spelling classes, an elementary and an advanced. The entire school was registered in one or the other of these classes. We all stood up in a line, one end of which was the "head," and the other the "foot." If a pupil spelled correctly a word that had been missed, he "trapped" all those that had failed (*i.e.*, passed them toward the head of the class). The method of spelling was to pronounce the word as the teacher gave it, then to spell and pronounce each syllable separately, and, finally, to put together the syllables into the synthesized word. This process involved sight, when the pupil studied, and hearing and the motor apparatus of speed, when he recited. The muscular activity involved in "trapping," the strong incentive to study

offered by a chance to get to the head of the class, the lively interest aroused by the contest — all these were elements of association that aided the recall of the word. The method was faulty, however, in one or two particulars. It omitted the use of the muscular apparatus employed in writing and overlooked the important fact that about the only practical use we make of spelling is in writing rather than speaking.

2 A Modern Substitute for "Trapping"

The method of "trapping" is hardly to be recommended in classes where the discipline is weak, because its use is liable to lead to disorder. Nor is it feasible in classes that are very much crowded, except as an occasional test. Therefore, some device must be found which is adapted to the conditions as they exist in the average class in crowded city schools. It is believed that the following plan meets these conditions:

(1) The teacher selects a word that has never been taught or given to the children. He slowly writes it upon the board, spelling it orally as he does so. As the children observe the process, they have the auditory image of the oral spelling, the visual image of the completed written word, and the mus-

cular image of the eye as it follows the hand that writes the word.

(2) Next the children write the word into their note-books, spelling orally at the same time. They have thus the auditory image of the word, the muscular image of the vocal organs, and the muscular image of the hand that writes.

(3) If it is a word whose meaning is also to be taught, a conversation now follows as to its content. Its meaning is briefly illustrated and discussed, but not written at the time. This enhances the interest of the whole process and furnishes an additional association as a clue for the recall of the spelling of the word.

(4) After four or five words have been treated in this way, the children are asked to look at each word once more, and to avert their eyes to see if they have imaged it perfectly.

(5) The board is now cleaned, the books are put away, and the spelling papers are given out. The first word is pronounced and the children write it, laying down their pencils at a given signal.

(6) The teacher writes the word on the board, and at the same time a pupil orally spells it. Those who have made a mistake pick up their pencils and correct the error. Those who are right, remain in position. If eight are wrong, the teacher writes the

figure "8" after the word in his list. This shows him, when he comes to review, how many children have missed that word. By and by, some words in the list will thus have a row of figures written after them. He keeps on reviewing until each row of figures is reduced to zero. Then he stops. There is no use in wasting time on a word that every pupil can spell.

(7) Each word is treated similarly. When the spelling is done the papers are collected and filed or thrown away. The teacher need spend no further time on corrections. Each pupil's degree of success is already recorded on his own paper, and the success of the class is shown by the figures after the words in the teacher's note-books.

The above device is offered, not as a panacea for all the spelling evils, but as a modern substitute for "trapping." A teacher may try the plan under unfavorable conditions of discipline or grade, and pronounce it futile or foolish. I have no quarrel with him. It certainly involves a correct principle; if he can get better results by embodying the principle in some other method, by all means let him do it. I am inclined to think that for the higher grades it does too much for the pupil. Children need the discipline that comes from book mastery. In the upper grades it may be better simply to set for the

pupil the task of learning so many words. But in that case the child would probably be helped by some such device as that herewith presented.

3 Spelling in 1815

"Each pupil has a blank book, in which the words spelled are written with pen and ink. I use Worcester's dictionary, which I go through regularly, from beginning to end. . . . With the lower class my method was to write the words to be spelled on the blackboard; a few minutes were allowed the class to study them; the rules of spelling were given and explained whenever they were applicable; if there were any words whose meaning was not understood, they were explained; and I stated what I knew of the derivation and history of all interesting words; the words were then pronounced, first by the teacher, and then by the scholar."[1]

4 Names of Common Things

A high degree of interest can be created among children by giving them lessons in which they are required to spell the names, qualities, actions, etc., of common things, such as an object in the school-

[1] Christopher A. Green: "Methods of Teaching Spelling." American Institute of Instruction Lectures, 1851, p. 161.

room, articles of furniture, articles of wearing apparel, kinds of food, things bought at stores, things taken to market, trees, flowers, vessels, vehicles, men, women, etc.[1]

5 "Logomachy"[2]

This word means "word-fight." The device consists in trying to make as many words as possible out of letters printed on separate pieces of cardboard, which are distributed to the players. The play necessitates correct spelling and frequent recourse to the dictionary; it arouses emulation, and fixes eye-images of words in the memory.

6 Calling Attention to Parts Liable to be Mistaken[2]

The feature of this book to which attention is particularly invited, and in which it differs from any book with which the writer is acquainted, is its classification of words upon the basis of form, *with that part of the word which is likely to be mistaken as the form element.*

Illustration: Sound ā.
Equivalents ay, ai, e, ea, ee, eigh, et, ey.

[1] Wickersham: "Methods of Instruction." Lippincott, 1866.

[2] Diamond's "The Rational Speller." Macmillan, 1901.

IV	V	VI	VII
cl*ay*	w*eigh*	pr*ai*rie	attach*e*
dr*ay*	n*eigh*	d*ai*ry	caf*e*
pl*ay*	sl*eigh*		cur*e*
str*ay*	n*eigh*bor	v*a*ry	employ*e*
etc.	ob*ey*	w*a*ry	protog*e*
pr*ey*	conv*ey*	w*a*rily	resum*e*
th*ey*	surv*ey*	v*a*riable	vis*e*
wh*ey*	d*ai*ly	y*ea*	matin*ee*

The part printed in italics may be written or printed in colored chalk on the blackboard.

7 Drill on Words Often Mispronounced [1]

Take as many of the following or similar words as you desire for one exercise, write them upon the board, and in a parallel column write the words again, indicating the correct pronunciation. Allow each pupil sufficient time to study and practice the proper pronunciation — a half-day at least — after which erase the column in which the proper pronunciation is marked, and test the pupil's ability to pronounce correctly each word in the list: museum, lyceum, precedent, allopathic, homeopathic, allopathy, homeopathy, obligatory, combatant, indis-

[1] Shaw & Donnell: "School Devices," p. 83. A. S. Barnes & Co.

putable, apparatus, covetous, iodine, prelude, exquisite, itinerant, impetus, architect, condemning, process, Juliet, greasy, interesting, allies, quinine, gallows, finance, mischievous, Khedive, condolence, leisure, extant, fatigue, bronchitis, telegraphy, photography, inquiry, Italian, bade, acclimated, extol, franchise, lamentable, patron, Pall Mall, abdomen, association, pronunciation, bellows, livelong, Arab.

8 Spelling

Dictation as a Test.[1] (The Fifth Herbartian Step).

(1) How the Exercise is Conducted

(*a*) At least one child writes on the blackboard, while the rest write on paper.

(*b*) The number of words dictated consecutively depends upon the mental capacity of the child and upon the nature of the selection.

(*c*) Only groups of related words are dictated.

(*d*) The speed of the dictation is limited by the ability of the majority of the class to take down the exercise *verbatim*.

(*e*) No repetition is permissible unless it is demanded by the content of the selection.

[1] From Cronson's "Methods in Elementary School Studies," Macmillan, 1906. This device is quoted with the permission of the publishers.

(2) Method of Correction

(*a*) Individual children are called upon to read their written exercises, the rest meanwhile inserting omissions.

(*b*) The blackboard exercise as "proof-sheet": the attention is directed first to the paragraphs as wholes, then to the separate sentences as wholes, and lastly to the elements of each sentence.

(*c*) Classes that are supplied with dictionaries should use these to look up the correction of misspelled words and the meanings of unknown words.

(*d*) Correction is made by passing a line through the error, re-writing correctly above the word, and in the case of a misspelled word, writing it also below the exercise.

General Directions

(*a*) Time must be assigned for the study of the corrected forms, and for recitation by several pupils.

(*b*) Each sheet of paper should contain two original dictations; if re-dictation is deemed advisable, it should be taken on a separate sheet.

(*c*) An oral review of exercises should be had at least once a month, when children are given an opportunity to restudy previous corrections. A recitation should follow.

Model Lesson [1]

The teacher dictated the following in groups of words included between the vertical lines:

As the fair happened on the following day, | I had intentions of going myself.|
"No, my dear," said my wife, | "our son Moses is a discreet boy, | and can buy and sell to very good advantage." |

The "Proof-sheet"

As the fair happened on the following day, I had intensions[intentions] of going myself. ¶ "No, my dear, said my wife, " our son Moses is a discret[discreet] boy , and can buy and sell to very good advantag[advantage]." "

As I also had a good opinion of my son's prudense[prudence], I was willing enough to trust the business with him.

1	Intentions	5	discreet
2	¶	6	,
3	"	7	advantage
4	"	8	prudence

[1] The main aim of the lesson was to test the children's knowledge of paragraphs and quotation marks.

9 Meaning

"The method of Mr. Alcott, in a school composed chiefly of young children, was to converse with his scholars on the meaning of every word spelled; so as to create an interest in it, and make them perceive its connection and use. They wrote these words from their spelling book, until they knew them, and then spelled them orally from dictation. It seems to me that such a method, applied by one competent, is nearly perfect as far as it goes. The blackboard was then cleaned, the words were put out to the class and written by them in their books. The lesson was then written over again on the blackboard, the pupils compared their work with that on the blackboard, marking mistakes with a cross, and the teacher called for and recorded the number of mistakes which each had made. The teacher afterwards corrected the books, examined them, and wrote, in a book kept for that purpose, all the words which were misspelled; he began his next day's lesson with these words, and continued to do so until every word had been spelled correctly by every member of the class. The whole process takes the pupil twenty minutes each day."[1]

[1] Christopher A. Green: "Methods of Teaching Spelling," American Institute of Instruction Lectures, 1851, p. 181.

10 Spelling by Dictation

"For four or five years, spelling has been taught from 2A to 4A, solely by dictation. Tests have been made in two 4A classes. In each one, the children were placed in two sections: one composed of those who had been taught to spell by dictation for a year or more; the other of those who had been taught to spell by dictation for less than a year. The average result of the former group was 90%, while in the case of the latter group, the result was only 80%. The method of dictation gives practice in such words as *there*, *which*, *very*, *those*, etc. When we write, we write in sentences and there seems to be no need for children to write words in columns. It is an unnatural arrangement and does not give sufficient practice in the spelling of small words. It would be as sensible to teach children to read columns of words daily, and have readers in their hands but once a week, as it is to teach children to spell columns of words, and conduct dictation but once a week." [1]

11 Meaning and Use

The method pursued by the writer has been to supply the children with the necessary definitions and illustrative sentences. Briefly the method has been as follows:

[1] Kate Van Wagenen.

After the reading lessons for the following week have been chosen by the teacher, a selection is made of the words that require special study. These form the list of meaning and use words for the week. The next step is to compose a simple but comprehensive definition of each word. This done, the illustrative sentence is next in order. These two should give the pupil a good working knowledge of each word. With the aid of a hektograph the teacher has been able to furnish the pupils on each Monday morning of the term a list of the words for the week, together with definitions and illustrative sentences. Thus week after week a word book is built up which is always at the service of the pupils.

The illustrative sentences have proved very valuable, not only because they have thrown additional light upon the meanings of words, but also for the assistance they have given the pupils as guides in the construction of original sentences. With them at his command he seldom makes the foolish blunders so common in this subject. If we want children to furnish sentences it is only fair that we should furnish them with a model. We do it in composition; why not in the study of words?

The relation of the reading lesson to word study as a result of the above outlined method is worthy of a few words. The teacher has been careful to

arrange the word list so that words shall come up for consideration before the reading lesson from which they were chosen and on the same day. The pupils have not been told that the words were chosen from the reading lesson, and for two reasons. In the first place, it is a great delight to the pupils to discover the words they have been discussing and using earlier in the day. Again, the apparent discovery serves to indicate that these words are words in common use. Consequently the pupil is on the look-out to find the same word in other quarters. Thus there is aroused a genuine interest in the study of words, and what would seem to be a dry and uninteresting topic has had "breathed into it the breath of life." The reading lesson, too, has been the gainer, for it has been cleared of many of its difficulties, and more time is left for actual reading.

Specimen List

(1) *Melancholy* — Extremely sad and downhearted. "A melancholy story" — "His mother's death made him melancholy." "A melancholy life."

(2) *Phenomenon* — (*a*) An unusual happening or fact. "A child born with six toes is a phenomenon." "Samson had phenomenal strength." (*b*) Something causing surprise or wonder. "Meteors are natural phenomena."

(3) *Irresolution* — Lack or want of firmness of purpose. Lack of the power of deciding what to do. "Irresolution during a fire may cause the loss of many lives." "The defeat was caused by the General's irresolution." "An irresolute man lacks the nerve to act."

(4) *Relinquish* — To give up using or having. "He relinquished the stolen goods." "He relinquished his hold on the oar and sank."

(5) *Surplus* — That which remains beyond what has been used or needed. "Surplus wealth" — "After paying his debts there was a surplus."

(6) *Incredulous* — Not disposed to believe. "When the clerk said that the money had been stolen, his employer was incredulous."

(7) *Appropriate*—Suitable for the purpose or occasion. "The General was buried with appropriate honors, and the President made an appropriate speech."

(8) *Embarrass* — To put in a confused and disturbed state of mind. "He was much embarrassed when called upon for a speech." "His embarrassment caused him to stutter and stammer."

(9) *Opportunity* — A favorable chance. A fit or convenient time. "The government furnishes us all with an opportunity to learn." "He had an opportunity to make money." "It was the opportunity he was looking for."

(10) *Eternity* — (*a*) Endless time. "Washington's fame will live through eternity." (*b*) Unending life beyond the present. "In a moment it exploded and fifty lives were hurled into eternity."

(11) *Indulge* — To give in (usually unwisely) to the wishes or desires of oneself or another. "To indulge a child." "To indulge in strong drink." "Indulgence in opium."

(12) *Maintain* — (*a*) To support. Provide for. "To maintain a family." "Orphan asylums are maintained by charity." (*b*) To support by argument. "England maintained her right to tax the colonists."

(13) *Superior* — (*a*) Of higher rank. More excellent. Finer or better than the others. "He saluted his superior officer." "The enemy were superior in number." "A superior article." (*b*) A person higher in rank than another or others. "The General is the superior of the Colonel." "He was his superior in knowledge."

(14) *Inferior* — (Opposite of superior.)

(15) *Menace* — (*a*) To threaten with evil. "He menaced his enemy with death." (*b*) Anything that threatens with evil. "He laughed at his enemy's menace." "The swamp was a menace to the health of the people living nearby."

— A *Brooklyn Principal*

IX

Summary of Word Study

I Word Analysis and Synthesis

The mere memorizing of the meanings of prefixes, suffixes, and stems is a dull and profitless performance. Drill in the use of these elements is absolutely essential if we hope to interest the pupil permanently in the study of words. Suppose we assume that interest, rather than knowledge, is our goal in this form of word study. This will be a sensitive test of the value of our method.

As soon as the interest flags, we shall know that something has gone wrong in our teaching. We shall be constantly on the lookout for interesting material and helpful devices. In other words, the beginning of wisdom here is interest on the teacher's part. Seek ye first this chief good, and all other things shall be added unto you.

Create in the pupil a need for the new knowledge, and he will take pains to satisfy his desire. The reading of such books as "Trench on the Study of

Words" and Richard Grant White's "Words and Their Uses" is pretty sure to beget interest on the teacher's part and to open up a rich mine of resources for classroom use.

(1) ANALYSIS Suppose we take the word *Capital* as used in geography. We find that the word is made from *caput*, the head, and *al*, pertaining to. The word means literally, *pertaining to the head.* The head is the seat of mental power, the chief part of the body; hence the usual applications of the word are based on this idea of chief power or authority. Thus, we have capital city, capital letter, capital punishment, capital play, capital in business, making capital of the candidate's bad record.

Lessons in word analysis may be assigned in the following form:

BENEFICENT

The pupil is expected to find the parts of which the word is composed and to infer the literal meaning of the compound. He may then find figurative applications of the word and illustrate each use by an appropriate sentence of his own construction or selection.

(2) SYNTHESIS Reversing the process, we may have an exercise like the following:

IN

ALIEN

ABLE

The pupil will tell the meaning of the parts and form the compound, then infer the literal meaning of the word, and proceed from this to the metaphorical uses. The study of the Declaration of Independence in the higher grades furnishes an occasion for the study of this word.

2 Choice of Words

The items suggested in the summary on pages 162–171, under the head of "Choice of Words," are not meant to be exhaustive or mandatory. The topic is brought forward for the sole purpose of reminding the teacher that something of the sort must be done if we expect the speech of children to rise above the commonplace and to become adequate for the correct and forceful expression of thought and feeling.

During a recent examination of a package of compositions written by seventh-grade children, the writer selected at random for careful reading an essay which had been written by a girl of thirteen. The paper contained a description of natural scenery. The child had used the word "lovely" three times on a single page in referring to a landscape, and had employed "nice" to describe the sky. These important words had been passed by the teacher without correction or comment. He had not felt the need of guiding children in the choice of words.

Probably the best way to suggest to young writers the importance of using the right word is to present correct models. The class referred to above would have profited by the careful study of a passage like the following:

"A few amber clouds floated in the sky, without a breath of air to move them. The horizon was of a fine, golden tint, changing gradually into a pure apple-green, and from that into the deep-blue of the midheaven." [1]

The right word is the *specific* word, rather than the *general*. The specific word in description or narrative is usually the *concrete* word. Witness the following account of the meeting of Abraham's servant with Rebekah (Genesis XXIV):

"And he made his camels to kneel down without the city by a well of water at the time of the evening, even the time when women go out to draw water. And she said, Drink my lord; and she hasted and let down her pitcher upon her hand, and gave him drink."

For further suggestions on the right use of words see the author's "Composition in the Elementary School" (A. S. Barnes & Co.), pp. 41, 42.

[1] Washington Irving.

3 Diacritical Marks

The names of marks used should be taught in each grade. Not all the marks used by Webster are given in the summary on pages 162–171. Grades 6A–8B should teach such additional marks as an intelligent use of the dictionary may require.

There are two ways of conducting drills in diacritics. In one, the teacher writes or pronounces a word and the pupil inserts the necessary marks to indicate the pronunciation. In the other, the teacher marks an unfamiliar or difficult word and the pupil pronounces the same in accordance with the marking. When a pupil in his reading mispronounces a word, the latter method should usually be employed. The word *aretic* is mispronounced by probably half the children in the elementary schools. It is one of the clearest evidences of the general neglect of phonics as applied to pronunciation.

4 Use of Dictionary

Drills in the correct and rapid use of the dictionary as an authority on the meaning and pronunciation of words should be conducted in the sixth, seventh, and eighth years. Many devices may be employed to stimulate interest. Lessons may be organized as

games, in which the test is to find a given word in the shortest time, or to find the largest number of words in a given time. Pupils should have individual dictionaries from the beginning of the sixth year; and they should early acquire the *dictionary habit.*

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6 Alphabetical List of Prefixes, Suffixes, and Stems for Reference

(1) Prefixes

a (Eng.) = *at; in; on;* or *adds force.*
a (Lat.) See *ab* or *ad.*
a (Gr.), **an** = *without; not.*
ab (Lat.), **abs**, **a** = *from.*
ad (Lat.), **a**, **ac**, **af**, **ag**, **al**, **am**, **ap**, **ar**, **as**, **at** = *to.*[1]
ambi (Lat.), **amb**, **am** = *around.*
amphi (Gr.) = *both; around.*
ana (Gr.) = *up; back; through.*
ante (Lat.) = *before.*
anti (Lat.), **ant** = *against; opposite.*
apo (Gr.), **ap** = *from.*
be (Eng.) = *by; about; over; to make; or adds force.*
bi (Lat.), **bis** = *two; twice.*
cata (Gr.), **cat** = *down.*
circum (Lat.), **circu** = *around.*
con (Lat.), **cum**, **co**, **col**, **com**, **cor** = *with; together; wholly.*[1]
contra (Lat.), **contro**, **counter** = *against.*
de (Lat.) = *down.*
dia (Gr.) = *through.*
dis (Lat.), **di**, **dif** = *apart; not; opposite act.*[1]
dis (Gr.), **di** = *twice; two.*
dys (Gr.) = *bad; ill.*
e (Lat. Gr.), **ee**, **ef**, **ex** = *out of; from.*

[1] The last letter of the prefix is often modified by the first letter of the root. Thus, the word *affix* consists of *ad* and *fix;* but the *d* in *ad* becomes *f.*

en (Eng.), **em** = *in; on; to make.*
en (Gr.), **em** = *in; on.*
epi (Gr.), **ep** = *upon.*
en (Gr.), **ev** = *well; good.*
extra (Lat.) = *beyond.*
for (Eng.) = *not; from.*
fore (Eng.) = *before.*
hyper (Gr.) = *over; beyond.*
hypo (Gr.) = *under.*
in (Lat.), **il** = *in; on.*
im, **ir** = *not.*
inter (Lat.) = *between.*
intro (Lat.) = *within.*
meta (Gr.), **met** = *beyond; change.*
mis (Eng.) = *wrong; wrongly.*
mono (Gr.) = *alone.*
non (Lat.) = *not.*
ob (Lat.), **o**, **oc**, **of**, **op** = *in front; in the way; against.*[1]
off (Eng.) = *from.*
out (Eng.) = *beyond.*
over (Eng.) = *above.*
para (Gr.), **par** = *side by side; unlike.*
per (Lat.) = *through; thoroughly; by.*
poly (Gr.) = *many.*
post (Lat.) = *after.*
pre (Lat.) = *before.*
pro (Lat.), **pur** = *for; forth.*
pro (Gr.) = *before.*
re (Lat.) = *back or again.*
retro (Lat.) = *backward.*
se (Lat.) = *aside.*
semi (Lat.) = *half.*
sine (Lat.) = *without.*
sub (Lat.), **suc**, **suf**, **sug**, **sup**, **sus** = *under.*[1]
subter (Lat.) = *under.*
super (Lat.), **sur** = *above; over.*
syn (Gr.), **sy**, **syl**, **sym** = *with; together.*
to (Eng.) = *the; this.*
trans (Lat.), **tra** = *over; beyond; through.*
tri (Lat., Gr.) = *three; thrice.*
ultra (Lat.) = *beyond.*
un (Eng.) = *not* (*in adjectives and nouns*).
un (Eng.) = *opposite act* (*in verbs.*)
under (Eng.) = *beneath.*
vice (Lat.) = *instead of.*
with (Eng.) = *against; from.*

[1] See note on *ad*.

(2) Suffixes

able (Lat.) }
ible } = *able to be; fit to be; causing* (*used to form adj.*)
ble }

ac (Gr.) = *pertaining to* (*adj.*)

aceous (Lat.) }
acious } = *having the quality of: full of* (*adj.*).

acy (Lat.) = *state or quality of being* (*nouns*).

age (French) = *state of being; act of; that which; a collection of* (*nouns*).

al (Lat.) = *pertaining to; the act of* (*adj.; n.*).

an (Lat.) = *pertaining to; one who* (*adj.; n.*).

ance (Lat.) }
ancy } = *state of being; act of* (*n.*).

ant (Lat.) = See *ent.*

ar (Lat.) = *pertaining to* (*adj.*).

ar (n). See *er* (*n.*).

ard (Eng.) *one who* (*n.*).

ary (Lat.) = *belonging to; one who; place where* (*adj.; n.*).

ate (Lat.) = *one who; to make; having* (*adj.; n.; verb*).

ble. See *able.*

cle (Lat.) }
cule } = *little* (*n.*).

dom (Eng.) = *state of being; domain of* (*n.*).

ed (Eng.) = *past tense and past participle* (*v.*).

ee (Fr.) = *one to whom* (*n.*).

eer (Fr.) }
ier } = *one who* (*n.*).

en (Eng.) = *made of; to make; past participle; little* (*adj.; v.; n.*).

ence (Lat.) }
ency } = *state of being* (*n.*).

ent (Lat.) = *one who or that which; being or ing* (*adj.; n.*).

er (Eng.) = *one who or that which* (*n.*).

er (Eng.) = *more* = *comparative degree* (*adj.*).

ery (Eng.) }
ry } = *place where; state of being; collection; art of* (*n.*).

escence (Lat.) = *state of becoming* (*n.*).

escent (Lat.) = *becoming* (*adj.*)

ess (Fr.) = *female* (*n.*).

est (Eng.) = *most, superlative degree* (*adj.*).

ette (Fr.) = *little* (*n.*).

ful (Eng.) = *full of; causing* (*adj.*).

fy (Lat.) = *to make* (*v.*).

hood (Eng. = *state or quality of being* (*n.*).

ible. See *able.*

ic (Lat., Gr.) }
ical } = *pertaining to; made of; one who* (*adj.*).

ics (Gr.) }
ic } = *science of* (*n.*)

id (Lat.) = *quality; pertaining to* (*adj.*).

ie (Eng.) }
y } = *little* (*n.*).

ier. See *eer*.
ile (Lat.) = *able to be; relating to* (*adj.*).
ine (Lat.) = *belonging to*.
ing (Eng.) = *the act; containing* (*n.; v.; .adj.*).
ion (Lat.) = *act of; state of being* (*n.*).
ise (Gr.) **ize** = *to make; to give* (*v.*).
ish (Eng.) = *somewhat; like; to make* (*adj.; v.*).
ism (Gr.) = *state of being; doctrine* (*n.*).
ist (Gr.) = *one who* (*n.*).
ite (Lat.) = *one who is; being* (*adj.; n.*).
ity (Lat.) **ty** = *state or quality of being* (*n.*).
ive (Lat.) = *one who; that which; having power or quality* (*n.; adj.*).
ix (Lat. = *female* (*n.*).
ize. See *ise*.
kin (Eng.) = *little* (*n.*).
less (Eng.) = *without* (*adj.*)
let (Eng.) = *little* (*n.*).
ling (Eng.) = *little* (*n.*).
ly (Eng.) = *like; manner* (*adj.; adv.*).
ment (Lat.) = *state of being; act of; that which* (*n.*).
mony (Lat.) = *state of being; that which* (*n.*).
ness (Eng.) = *state or quality of being* (*n.*).
ock (Eng.) = *little* (*n.*).
or (Lat.) = *one who; that which* (*n.*).
ory (Lat.) = *relating to; place where; thing which* (*adj.; n.*)
ose (Lat.) **ous** = *full of; having* (*adj.*).
ple (Lat.) = *fold* (*adj.*).
ry. See *ery*.
s (Eng.) **es** = *plural of nouns; third person singular of verbs* (*n.; v.*).
's (Eng.) **'** = *possessive case.*
ship (Eng.) = *state of; office of* (*n.*).
sion. See *ion*.
some (Eng.) = *full of; causing* (*adj.*).
ster (Eng.) = *one who* (*n.*).
th (Eng.) = *state of being* (*n.*).
tion See *ion*.
tude (Lat.) = *state of being* (*n.*).
ty. See *ity*.
ule (Lat.) = *little* (*n.*).
ulent (Lat.) = *full of* (*adj.*).
ure (Lat.) = *state or act of; that which* (*n.*).
ward (Eng.) **wards** = *direction of* (*adv.*).
wise (Eng.) = *manner* (*adv.*).
y (Eng.). See *ie* (*n.*).
y (Eng.) *full of; having* (*adj.*).
y (Lat.; Gr.) = *state of being* (*n.*).

(3) Latin Stems

(act). See *agere.*
aequus (equ, equal, iqu), *equal; just.*
agere (act, ag), *to do; to drive.*
alienus (alien), *another; stranger.*
anima (anim), *life.*
animus (anim), *mind.*
annus (ann, annu, enn), *a year.*
bene, *well.*
cadere (cad, cas, cid, cide), *to fall.*
capere (cap, capt, ceive, cept, cip), *to take.*
caput (capit, cipit), *the head.*
(cas). See *cadere.*
cedere (ced, cede, ceed, cess), *to go; to yield.*
(ceive, cept). See *capere.*
(cid). See *cadere.*
(cip). See *capere.*
(cipit). See *caput.*
clamare (claim, clamat), *to cry out; to call.*
claudere (clud, clude, clus), *to shut.*
credere (cred, credit), *to believe.*
currere (cur, curr, curs), *to run.*
dicere (dict), *to say.*
dignus (dign), *worthy.*
ducere (duc, duce, duct), *to lead.*
(enn). See *annus.*
(equ). See *aequus.*
facere (fac, fact, feas, fect, fic), *to do; to make.*
felix (felic), *happy.*
ferre (fer, lat), *to bear; to carry.*
(fic). See *facere.*
fluere (flu, fluct, flux), *to flow.*
forma (form), *a shape; a form.*
frangere (frang, fract, fring), *to break.*
fundere (fund, fus, fuse), *to pour.*
gradi, (grad, grade, gress), *to step; to walk.*
haerere (her, hes), *to stick.*
(iqu). See *aequus.*
ire (it), *to go.*
(lat). See *ferre.*
litera (liter), *a letter.*
loqui (loqu, locut), *to speak.*
magnus (magn), *great.*
manus (man, manu), *the hand.*
mergere (merg, mers), *to dip; to plunge.*
migrare (migr, migrat), *to wander; to remove.*
mittere (mit, miss), *to send.*
pars (part, parti), *a part.*
ponere (pon, posit), *to place.*
potens (potent), *powerful.*
scandere (scend, scens), *to climb.*
scribere (scrib, scribe, script), *to write.*
secare (sect), *to cut.*
sedere (sed, sess, sid), *to sit.*
specere } **(spect, spic),** *to look;*
or **spicere** } *to see.*
spirare (spir, spire, spirat), *to breathe; to blow.*
(tain). See *tenere.*
tempus (tempor), *time.*

endere (**tend, tens, tent**), *to stretch.*
tenere (**tain, ten, tent, tin**), *to hold.*
(**tent**). See *tendere* and *tenere.*
(**tin**). See *tenere.*
trahere (**tract**), *to draw.*
tribuere (**tribut**), *to allot; to give.*
verbum (**verb**), *a word.*
vertere (**vert, vers**), *to turn.*
vocare (**voc, vocat**), *to call.*

(4) Greek Stems

alpha = *first letter in Greek alphabet.*
anthropos = *a man.*
arctos = *a bear.*
aristos = *noblest; best.*
astron = *a star.*
autos = *one's self.*
beta = *second letter in Greek alphabet.*
biblos = *a book.*
bios = *life.*
cristos = *anointed* (*Christ, Christmas*).
crites = *a judge.*
demos = *the people.*
drama = *a play.*
ge = *the earth.*
genea = *generation; birth.*
grapho = *to write.*
gymos = *naked* (*gymnasium*).
horos = *a boundary.*
hydor = *water.*
logos = *reason; discourse; science.*
mechanao = *to contrive; to invent.*
melos = *a song.*
odos = *a road or way* (*exodus*).
opto = *to see.*
orthos = *erect; straight* (*orthography*).
pathos = *feeling.*
philos = *a lover.*
polis = *a city.*
sophia = *wisdom.*
telos = *the end; distance.*
theatrum = *a theatre.*

SUMMARY OF WORD STUDY

	1 A
Spelling Standard List Miscellaneous List	
Meaning and Use	
Formation of Words: Prefixes	
Formation of Words: Suffixes	
Formation of Words: Stems	
Formation of Words: Analysis and Synthesis	
Diacritical Marks from Webster's Dictionary	
Use of Dictionary	
Choice of Words	
Figures and Allusions	

SUMMARY OF WORD STUDY — *Continued*

1 B	2 A	2 B
Incidental	150	200

In the first three years the words used are taken chiefly from the child's oral vocabulary.

For the first three years the marks taught and the order of the same depend upon the system of reading employed.

SUMMARY OF WORD STUDY—*Continued*

	3 A
Spelling Standard List Miscellaneous List	200
Meaning and Use	See Preceding Grades
Formation of Words: Prefixes	
Formation of Words: Suffixes	
Formation of Words: Stems	
Formation of Words: Analysis and Synthesis	
Diacritical Marks from Webster's Dictionary	See Preceding Grades
Use of Dictionary	
Choice of Words	Drill on correct use of is, are, was, were, has, have
Figures and Allusions	

SUMMARY OF WORD STUDY—*Continued*

3 B	4 A
250	150 150
	All
	āle, ärm, a̤ll, ăm, ēve, ĕnd, īce, ĭll, ōld, ŏdd, ūse, ŭp
Forms of do, see, come, go, plurals of nouns	Forms of irregular verbs and plurals of nouns

SUMMARY OF WORD STUDY—*Continued*

	4 B
Spelling Standard List Miscellaneous List	 150 150
Meaning and Use	All
Formation of Words: Prefixes	
Formation of Words: Suffixes	
Formation of Words: Stems	
Formation of Words: Analysis and Synthesis	
Diacritical Marks from Webster's Dictionary	Review 4 A, câre, ăsk, fẽrn, ôrb, rụde, fụll
Use of Dictionary	
Choice of Words	Special drill on forms of is, have, do, see, come, go
Figures and Allusions	

SUMMARY OF WORD STUDY — *Continued*

5 A	5 B
175 175	175 175
All	All
	a, be, en (em), for, fore, mis, out
	One who does — an, ant, ent, ar, er, or, ard, ary, eer, ier, ist, ive, ster
	Selected and related to words whose meaning is taught
	See p. 148
Review 4 A and 4 B, senăte, ēvent, idea, ōbey, ūnite	Review 4 A, 4 B, 5 A, ûrn, pitў, fo͞od, fo͝ot, out, oil

In the fourth and fifth years children should be taught how to find a word in the teacher's dictionary

Choice of adjectives used in description	Agreement of verb and subject, irregular verbs, prepositions

SUMMARY OF WORD STUDY—*Continued*

		6 A
Spelling Standard List Miscellaneous List		200 200
Meaning and Use		All
Formation of Words	Prefixes	*Review* 5B: over, to, un, under, with, ab (abs), ad
	Suffixes	*Review* 5B: *One who is; one to whom* — ate, ee, ite, ive *Place where* — ary, ery, ory
	Stems	Selected and related to words whose meaning is taught
	Analysis and Synthesis	See p. 148
Diacritical Marks from Webster's Dictionary		All For directions, see p. 152
Use of Dictionary		See p. 152
Choice of Words		Drill on irregular verbs, prepositions, relative pronouns
Figures and Allusions		

SUMMARY OF WORD STUDY—*Continued*

6 B	7 A
200 200	225 225
All	All
Review 5B, 6A: ante, bi (bis), circum, con, contra, de, dis	*Review* 5B, 6A, 6B: ex, extra, in, inter, non, ob, per
Review 5B, 6A: *State, quality, act* — acy, age, al, ance, ancy, dom, ence, ency, hood.	*Review* 5B–6B, *State, quality, act* — ing, ion, ment, ism, mony, ness, ty, ity
See preceding grades	See preceding grades
See p. 148	See p. 148
All See p. 152	All See p.152
See p. 152	See p. 152
Choice of verbs, Possessive forms	Precision Simplicity
	Simile

SUMMARY OF WORD STUDY—*Continued*

		7 B
Spelling Standard List Miscellaneous List		225 225
Meaning and Use		All
Formation of Words	Prefixes	*Review* 5B to 7A: post, pre, pro, re, retro, se, semi
	Suffixes	*Review* 5B to 7A: *Diminutives:* cle, cule, ie or y, kin, en, let, ling, ock, ule, ette
	Stems	Selected and related to words whose meaning is taught
	Analysis and Synthesis	See p. 148
Diacritical Marks from Webster's Dictionary		See p. 152
Use of Dictionary		See p. 152
Choice of Words		Precision Simplicity
Figures and Allusions		Metaphor

SUMMARY OF WORD STUDY—*Continued*

8 A	8 B
250 250	250 250
All	All
Review 5B to 7B: sub, super, trans, ultra, vice, a (an), amphi, ana, anti	*Review* 5B to 8A: apo, cata, epi, hyper, hypo, meta, sym
Review 5B to 7B: al, ary, ic, ical, ine, ory, ful, ous, able, ible, ble, ish	*Review* 5B to 8A: less, ant, ent, ate, en, ise, ize, ly, ern, ward
See preceding grades	See preceding grades
See p. 148	See p. 148
See p. 152	See p. 152
See p. 152	See p. 152
Precision Simplicity	Precision Simplicity
Personification	Review

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